

This Month's Cover

CHRISTMAS has always come upon the U. S. Marines in strange places, but never before has it found them in that most appropriate place of all, the Holy Land. Whether Christmas is peaceful or otherwise for the Marine detachment in Jerusalem, it may occur to them that their duty is, in an odd sense, close to that traditional assignment of the Corps — guarding the streets of "Heaven's scenes."

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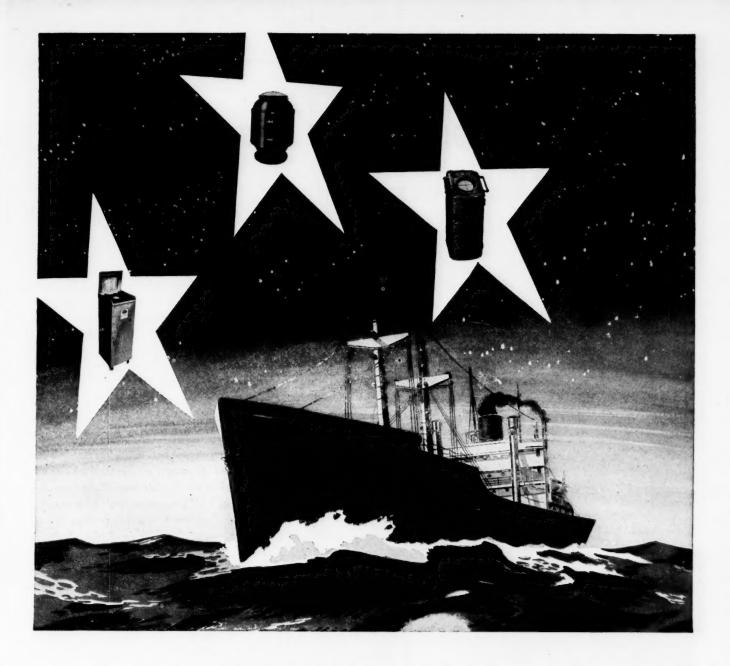
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Message Center

Information Please . . .

DEAR SIR:

I would like to see some sort of a column in the GAZETTE that would answer questions for the magazine's readers.

Many times out in the field, holding school, or when parade ground soldiering, some question arises that we can't answer and you could give us some hot dope.

A few more things I'd like to see in the Marine Corps.

Ask a man his risle number and he can sing it right out. Now ask that same person the true zero of his rifle for 300 yards and if it's been six months since he fired the piece, that marine probably won't know. Now which is more important, knowing your weapon number or knowing the true zero of your weapon for the different ranges? As acting platoon leader in the 2d Marines at one time, after firing on the range I would personally put the true zero of every man's weapon inside of his helmet using indelible ink.

Also, concerning school on small arms. It seems that most instructors emphasize nomenclature and other small data and do not stress immediate action and stoppages. How many men armed with a carbine or rifle know the weight and barrel length of the weapon? Yet in combat, if their piece failed to fire, how many of those men would know the steps of immediate action to go through? Not very many, if you'll check.

How many men in combat had to fire a rifle at a moving target and didn't have time to adjust their sling? Yet I have never seen any peacetime training where a rifleman fired at a moving target without using his sling. Maybe I haven't been around or perhaps the Marine Corps doesn't have the time and ammunition for this sort of training. There are plenty of intelligent people in this outfit who could find a remedy for such situations.

Each month the GAZETTE pays five dollars for each letter printed. These pages are intended for comments and corrections on past articles and as a discussion center for pet theories, battle lessons, training expedients, and what have you. Correspondents are asked to keep their communications limited to 200 words or less. Signatures will be withheld if requested; however, the GAZETTE requires that the name and address of the sender accompany the letter as an evidence of good faith.

Well I could go on and on, but it's time to "train in and serve."

SAMUEL COSMAN TSgt, USMC

ED.: One of the functions of the GAZETTE is to serve as an unofficial source of official information. When our readers have pertinent questions troubling them, we attempt to find authoritative answers. We receive quite a few of these requests in the course of a month. Most are answered directly to the correspondent. Some, if of general interest, are printed in the GAZETTE.

MGs in the Attack . . .

DEAR SIR:

If I know my machine gunners then you are probably being besieged with letters since printing Capt Sexton's article Machine Guns in the Attack in the October issue of the GAZETTE.

One of the first things I came to understand about machine guns and their tactical employment was never to set myself up as an authority or expert. The author of the aforementioned article seems to infer that he is such an authority or expert, even going so far as to refer to information obtained from machine gun officers from all six of the Marine divisions as well as Melvin M. Johnson, Jr., to substantiate his opinions.

In the first place the Marine Corps Schools have a habit of assigning some fairly capable instructors to teach in the schools. If they say that Capt Answerrite gave the correct solution to their question then it is just possible that the instructors know from experience why the Captain's answer was correct.

In the second place the whole article seems irrelevant in most respects because it is the commander's prerogative to attach units of his machine gun platoon to his rifle platoon if he decides that such action is necessary to insure the success of the mission.

In the third place since when has Melvin M. Johnson, Jr. become an authority on the tactical employment of machine guns? Mr Johnson has designed and produced some guns and rifles but does that make him an authority and expert on the tactical usage of same?

It might prove highly informative to the Captain to read up on what the enemy thought of the employment of machine guns by the Americans in that antiquated era of the '03 and World War I. Members of the German General Staff as well as others commented on this in detail.

continued on page 4



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Message Center

continued from page 2

It seems that every time someone gets a wild idea the machine gun organization is changed. For the most part these changes have been sound. But please, Capt Sexton, before you start changing the tactical employment learn a little about the guns and present employment. During the past eight years I have witnessed the machine gun units go through many transformations. First we had the three platoon company, then they threw in the 81mm mortar and antitank guns to give us that nice little five platoon outfit. Just when they were discussing the possibility of throwing in the flame throwers, bazookas, etc., someone decided on the present organization. Now, according to Capt Sexton, we should attach the section to the platoon. Next we'll hear someone say attach a gun to the squad. Where will it end, in the fire team or better yet why not arm everyone with a LMG?

I suggest that Capt Sexton leave the machine gun tactical employment alone. The commanding officer will decide, when the decision must be made, to support or attach the MG unit. Remember that the machine gun is still a crew served weapon. It is frequently necessary to attach units of the MG platoon. This attachment will give the close support Capt Sexton speaks of but it also has a tendency to place the gun and crew in a position of being immobilized when the fire fights start. Has the Captain ever tried to move that gun around when the stuff is flying? How about the casualties to the gun crews such exposure causes? How fast does Capt Sexton plan to train and replace these crew casualties?

The present organization and employment of the machine guns is sound. It allows sufficient flexibility to meet the situation as the commanders see it. The school is correct.

> W. T. GLASS Major, USMCR.

En.: Every man to his opinion. Our opinion is that Capt Sexton was preeminently qualified to write *Machine Guns in the Attack*. Not only was he teaching company tactics at the Amphibious Warfare School, Junior Course, at the time he wrote the article, but his war record shows five operations, from a raider platoon on Bougainville to a company in the 4th Marines on Okinawa. His personal decorations include two Silver and a Bronze Star.

"Why Don't They" . . .

DEAR SIR:

If the GAZETTE had a "Why Don't They" column I would submit the following:

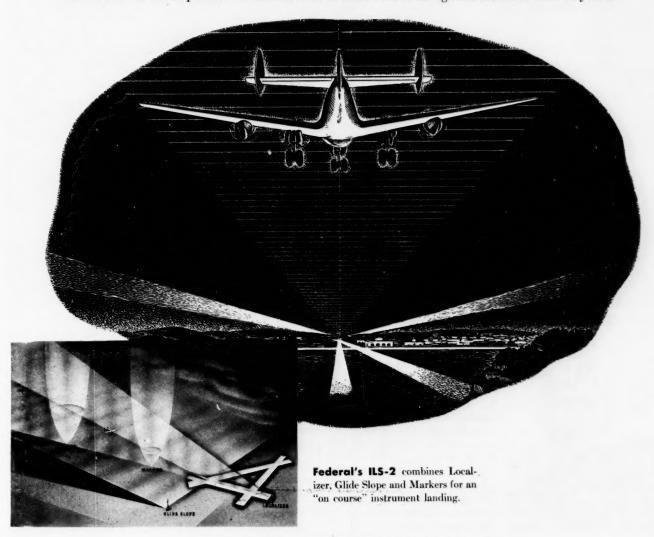
Why don't they make utility coats with a double epaulet? By far the largest number of utility coats wear out by coming apart at the shoulders then being torn by the user in order to get a survey. The double epaulet would insure longer life and save considerable money in the long run.

continued on page 6

HOMEWARD PATH...

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Today the landing of aircraft by means of the radio beam Instrument Landing System—known as the ILS—is a routine operation in important airports throughout the world. Accepted as standard equipment by national and international aviation bodies, the use of this system during the past winter has permitted many air operations which would not have been possible without it ... operations which were carried out with safety ... providing better service for the public, better income for the airlines. "Missed approaches"—the overshooting of the landing strip—are virtually eliminated with ILS. The I T & T version of this system—known as Federal's ILS-2—has been ordered and is being installed in many countries throughout the world. I T & T and its manufacturing associates have led in the development and manufacture of radio aids to navigation for more than 28 years.



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WORLD UNDERSTANDING

THROUGH

WORLD COMMUNICATIONS

Message Center

continued from page 4

Why don't they place a metal protecting piece on the carbine sling where it goes through the front band swivel? All carbine slings wear out at that one place.

JOSEPH B. COURVILLE MSgt, USMC.

Ed.: Please consider Message Center to be our "Why Don't They" column.

More on Fitness Reports . . .

DEAR SIR:

I have just finished reading the October issue of the MARINE CORPS GAZETTE and find the article written by Bertram Vogel on page 52 to be one of the most interesting in the issue.

I have had thoughts along the same line but never had the "stuff" to make me put it in writing. I feel sure the senior officers would pay a little more attention to the business of taking care of the officers and men under them, if they knew they would be graded on their attitude.

Along with the suggestions Mr Vogel made, I would like to make this one: Why not a certified copy of all fitness reports to be given to the officer concerned? We could correct our errors if we knew what and how many there were. If we were the junior officers of the command with the possibilities of

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becoming commanding officers in any other outfit, then we would know the "ropes" and would not be hanging in mid-air wondering where we would land.

Let junior officers make fitness reports on senior officers; then we will know what kind of officers we really are. We don't want characters in uniforms, we want well informed and observant officers who can take up where any other officer leaves off.

B. E. EVERETT Captain, USMCR.

DEAR SIR:

I noted with interest the soundly written Fitness Reports From Down Under by Bertram Vogel. Though not the first article of its kind, it certainly dispensed with most of the arguments against letting subordinates mark their seniors.

After reading it, I put myself to the acid test and asked, "Haynes, would you object to being marked by your subordinates?" I could not help but answer, "No. I certainly would not." And such a system, if adopted, could not help but bring the real leaders to the forefront quicker and to the top more rapidly.

F. E. HAYNES Captain, USMC

From the Inspector General . . .

DEAR SIR:

Capt Pierce's excellent article, Don't Call It 'A&I', in the October issue of the MARINE CORPS GAZETTE, has been read with a great deal of interest and pleasure. It is worthy of note, however, that so deeply ingrained in the conscience of the service were the auditing and inspecting functions of the old "A-yu-Nye" that its adjutant's activities seem to have been completely overlooked. The A and I Department, in addition to making inspections and auditing non-appropriated accounts, also handled all matters connected with personnel, records, and mail, including even rifle marksmanship, reserves, and recruiting. It is this major portion of the A and I Department functions plus the auditing of the accounts of non-appropriated funds that, on its death on the twenty-fifth of May, 1943, were taken over by the newly organized Personnel Department. The Commandant was then left without an inspecting service until, as stated by Capt Pierce, the Inspection Division was created 14 August, 1945.

Incidentally, mail which continues to be received at Headquarters Marine Corps addressed to the Adjutant and Inspector, persistently is delivered by the mail room to the Inspector General. Yet, the chances are ten to one that the subject matter comes under the cognizance of the Director of Personnel.

Yes, the "A-yu-Nye" is dead but his unquiet ghost still walks.

ROBERT BLAKE BrigGen, USMC

continued on page 8



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Message Center

continued from page 6

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Sgt Albert D. Doe 211122, USMC

authorized leave from the UNITED STATES MARINE CORPS from 1 October 1948 to 24 October 1948

both dates inclusive.

During this period of leave, he is instructed to conduct himself with proper decorum, otherwise discip-HIJ Roe, Capt USMC linary action will result.

(commanding officer)

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Mr CharleyR. Doe

25 Feb 1921

(care of orapt.no.)

(date of birth)

albert D. Doe

Pocket-Sized Leave Papers . . .

DEAR SIR:

First I will tell you what a fine magazine you have. I have been reading it for some time and find it one of the best for a marine. Congratulations and keep up the good work.

Now down to business. There have been several different things that I have wanted to write you about but some how I just let it pass - this time I will not.

This has been kicking around in my head for some time, and I am sure other marines have given it some thought. The subject is leave papers. If you have ever been on leave, I'm sure you'll know what I mean. They give you so many different forms and sheets of paper that you have to have a 6x6 to carry them around. Some marines try to keep their uniform looking half way decent - they can't with their pockets bulging out with papers. This idea of mine may not be so hot but it may help someone else to work on it and start something. Here is a card I typed up which I think may be a fairly good idea. This card could be stencilled and issued to the different outfits. There probably should be a few additions to it and so forth, but it is just an idea. The ribbon situation is rather rough, there is nothing saying a guy rates

I hope you print this so some one can see it and maybe go to work on it. (I don't need the five bucks either.)

> NORRIS J. COLE TSgt, USMC

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The Marine Corps Gazette

PROFESSIONAL MAGAZINE FOR THE UNITED STATES MARINES

DECEMBER 1948

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This Month and Next

At the year's end it seems to be an editorial custom to pause, look back over the past year, and make promises for the future. On the whole, we on the Gazette were well pleased with 1948: Our re-designed, larger-size magazine was well received. We successfully met rising production costs. Our circulation figures have slowly, but steadily, climbed. Our personnel problems were pretty well met. But best of all was the reassuring current (we could hardly call it a flood) of manuscripts that has passed over our desks. No editor ever gets as many good manuscripts as he might wish, but we have been receiving a reasonable number of reasonably good articles from which we have endeavored to build up a reasonably well-balanced editorial content.

Of course we realize that we will never be able to satisfy all of our readers completely. Our circulation span is from the Secretary of the National Defense (he gets a copy; we hope he reads it) to the newest boot at Parris Island (we have a remarkably effective circulation promotion program down there). With such a wide divergence

in readership, naturally not everyone is going to be interested in every article.

Also, we would be the first to admit that we are missing a lot of good stories on current military and world developments. One good reason is that because of our quasi-official position we have to be careful of what we say on a policy level. (On at least one occasion, the RED STAR has dubbed the GAZETTE as being the reactionary mouth-piece of that most reactionary of American military services, the U. S. Marines.) Then, too, there is the security angle: that new fighter plane may be peachy, but we aren't always allowed to say how peachy or how many.

As for the current, unclassified, un-objectionable happenings that we miss, our regrets. Our office-bound staff has to depend on unsolicited manuscripts for much of this coverage. If Lieutenant, Separate Laundry Platoon, wants to know why we didn't tell our readers how the Separate Laundry Platoon supplied the 2d Marine Division at Culebra-Vieques with clean socks by air delivery, it probably is because the Lieutenant failed to write and tell us.

British Combined Operations

By LtCol Rathvon M. Tompkins
Photographs from the Imperial War Museum

(NOTE: The term "combined operations," as used in the British services, means "amphibious operations" as opposed to the American definition of an "operation involving forces of allied countries.")

To an American officer, and particularly to a marine, the story of the development of amphibious operations in the British service is of peculiar interest. It serves, moreover, to point up, with startling clarity, the absolute necessity for a continuing integrated study of the tactics, technique, equipment, and the practical application of all the various details that a successful amphibious operation requires. This continuity of study and effort was missing from the British service before World War II and because of its absence much time and money, as well as more than a few golden opportunities, were wasted.

The Dardanelles campaign with all its painful aftermath and bitterness represented the major Allied amphibious operation in World War I, and it ended as a complete and utter fiasco. The shadow of the Dardanelles failure effectively stunted any widespread effort to apply the lessons of that campaign. During the period from 1921-1938, therefore, the study of amphibious operations in England was confined almost exclusively to Staff College exercises which were carried out annually in a dilatory manner, rather in the nature of an obeisance to an obviously outmoded and useless system of warfare. These Staff College exercises were largely academic; troops were landed from ships' boats under cover of ships' guns; ports were inevitably secured intact with astonish-

LtCol Rathvon M. Tompkins spent last year in the United Kingdom as a student at the British Joint Services Staff College and as an instructor at the School of Combined Operations.

ing ease and speed and, thereafter, the operation continued as a normal land battle supplied by sea.

It is not entirely surprising to find that in 1922 the entire British fleet of craft for amphibious operations, other than ships' boats, consisted of one landing craft mechanized (LCM) driven by water-jet propulsion. Evidence shows that this was not an entirely satisfactory craft mainly on account of its design and its somewhat uncontrollable means of propulsion. Notwithstanding these shortcomings, this water-jet propelled craft from 1922-28 remained the sole component of the amphibious fleet. This was increased between 1928-30 to a total of four such LCM. The gentry controlling the purse strings on Service expenditures, as well as the Services themselves, were inclined to take rather a dim view of such questionable projects as amphibious operations and consequently the speciality was assigned a cellar-level priority.

The Italo-Abyssinian War in 1935-6 had a rather unexpected effect in that the Treasury, shaken from its usual peacetime somnambulance, authorized the necessary funds to permit the construction of four more of the redoubtable water-jet propelled LCM. The amphibious fleet, by 1936, thus consisted of eight of these LCMs.

It is interesting to note that there apparently was no liaison on the subject of amphibious operations with the United States. This in spite of the fact that as early as 1922 the U. S. Navy had recognized the need for study and development of the tactics and technique for amphibious operations and had assigned the task to the U. S. Marine Corps.

Although in 1937 the Japanese took the equivalent of six LSIs and about 400 minor landing craft up the Pai Ho to Tientsin, little notice was taken of the implications of such an event. It is evident that the advent and development of air power was responsible for the view that amphibious operations in the European theatre were hazardous, if not impossible.

In 1937 the Staff Colleges pointed out, respectfully but firmly, that it was a waste of their time and that of the students to devote a whole month in each course to the study of amphibious operations, when the equipment for such operations was restricted to one or two inefficient LCMs. In November 1937, possibly as a result of the Staff Colleges' protest, the War Office submitted certain proposals to the Chief of Staff. As a result of these proposals it was agreed to set up a sub-committee of the Deputy Chiefs of Staff who would study and make recommendations on Inter-Service exercises and operations, make recommendation on the development of equipment for Inter-Service operations, and, finally, to keep underreview the Manual of Combined Operations. Heretofore the preparation of Manual of Combined Operations had been the joint responsibility of the three Staff Colleges-Army, Navy and Air Force.

The British were inclined to take a dim view of such questionable projects as amphibious operations and assigned this specialty a cellar-level priority. Because of this attitude, time, money and many golden opportunities were wasted

Thus in July 1938, the Inter-Service Training and Development Center was set up at Portsmouth to study the development of material, technique, and tactics for all Inter-Service operations. It should be noted that the subjects were to include all forms of Inter-Service operations and were not confined to opposed landings. The center thus set up consisted of a captain, Royal Navy as commandant; one major, one Royal Air Force Wing Commander as members; and a captain, Royal Marines, as adjutant.

About this same time (1938) consideration was given to the desirability of providing a permanent striking force for amphibious operations; while the benefits of such a proposal were self-evident, it was reluctantly decided that it was not practicable under the circumstances then prevailing. However, it was directed that the study of amphibious operations at the Staff Colleges should be extended and that large-scale exercises should be carried out frequently, so as to spread the knowledge of amphibious operations throughout the three services. It is noteworthy that during these discussions no mention was made of any possible requirement for special ships, craft, or equipment.

TOWARDS THE END of July 1938, just after the Inter-Service Training and Development Center gathered for its first meeting, a landing exercise, under command of RearAdm Edward Collins took place on the south coast of England. The infantry brigade making up the landing force was commanded by an obscure brigadier-B. L. Montgomery, by name, who was later to make himself rather well-known from El Alamein to Tunis and from the Sangro to the Baltic. The infantry brigade was landed in whalers and barges: the weather deteriorated rapidly, troops could not be re-embarked, and they had to spend a miserable night ashore. Brigadier Montgomery remarked that the exercise was valuable from the physical hardening point of view. From this exercise, apparently the only one between the Wars which was carried out by operational troops, it was apparent to all concerned that the technique employed was archaic almost to the point of being completely useless.

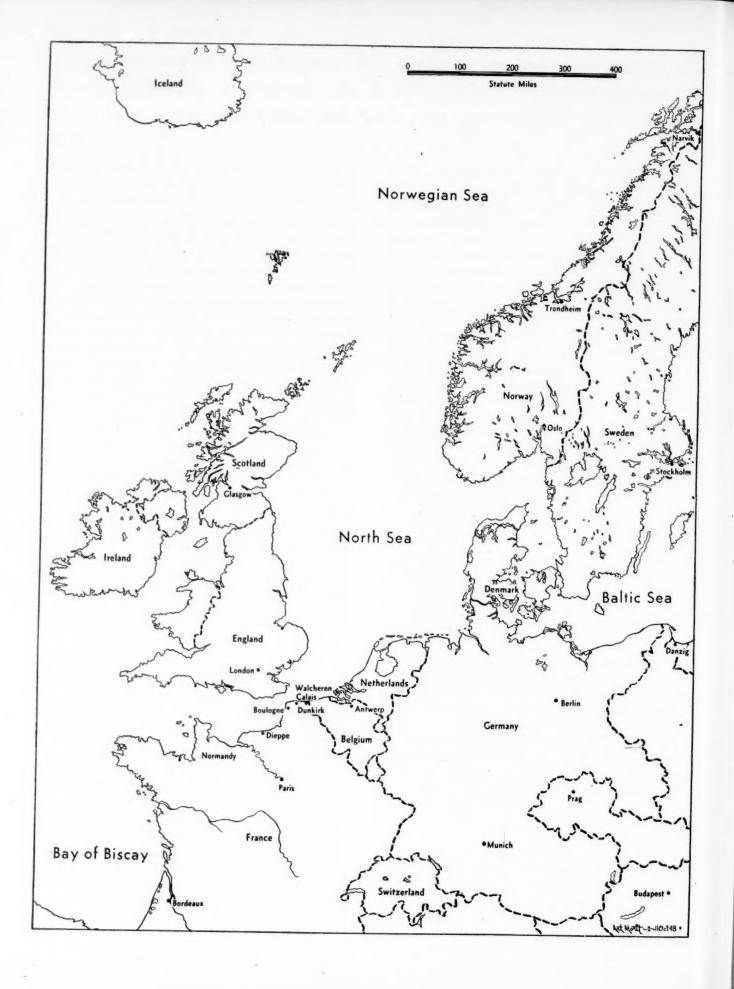
In August of 1938 the Inter-Service Training and Development Center submitted an interim report on which to base future development. This policy was based on comparatively small-scale operations and did not envisage the employment of heavy tanks (which did not then exist). The main points in this report included re-

commendations that a "landing craft carrier" should be provided by the Admiralty and that designs should be prepared for a self-propelled assault landing craft, to carry a platoon of infantry at 8-10 knots, with a low silhouette. This latter recommendation resulted in the Landing Craft Assault (LCA) which was finally produced in June 1939 in very limited numbers—18 to be exact.

After studying the foregoing report the Deputy Chief of Staff Committee decided that, since an amphibious operation on a large scale against opposition was not a likely operation in the early stages of war, no landing craft carrier should be provided. However, they directed that plans should be prepared for the conversion of suitable merchant ships and that a list of such ships should be compiled. They further directed that one self-propelled assault landing craft with the recommended characteristics should be manufactured. The Inter-Service Training Development Center was directed to make an investigation regarding the use of infra-red rays for beach finding; naval gunfire in support of ground operations; and beach piers for the discharge of supplies and equipment.

Up to this time the financial position of the Development Center had been on a very unsatisfactory and ill-defined basis. This condition was somewhat alleviated when, in the early Fall of 1938 as a result of the Deputy Chiefs of Staff recommendation, the Treasury directed that each service (Navy, Army, Air) should contribute £10,000 (about \$40,000) a year towards the Inter-Service Training Development Center.

- ₹ In September 1938, owing to the Munich crisis, the Chiefs of Staff decided to close down the Center and order the personnel concerned back to their organizations. Combined Operations, at that date, were apparently regarded as a highly impracticable affair which bore little relation to the stern realities of war. However, before detachment orders could be dispatched, Mr Chamberlin returned flourishing his umbrella and announcing "Peace in our time"; the Center was re-formed and the work continued. A bombardment code was produced which replaced no less than four different codes then in use in the Services. During the early part of 1939 several projects which were undergoing an academic investigation show considerable forethought. A list of the more important subjects under review (and on which papers were written) included:
 - (a) Dropping troops by parachute.



- (b) Landing water and petrol in amphibious operations.
- (c) Landing tanks.
- (d) Use of amphibious tanks.
- (e) Methods of crossing underwater obstacles.
- (f) Maintenance and supply from the air.
- (g) Use of ships for Headquarters in amphibious operations.
- (h) Production of a floating pier.
- (i) Provision of landing punts for coastal raids.

It has since been established that the foregoing papers were apparently of interest only to the people who wrote them, because they received no serious consideration from the authorities who could have translated the ideas into realities. Worse yet, the papers themselves were allowed to gather dust in the files until their very existence had been forgotten and the people who had written them either died or were at the far ends of the earth.

When war was declared in September of 1939 the Inter-Service Training and Development Center was again disbanded, just as had been done the previous year during the Munich crisis. This time the officers concerned did not dally, but hurried off to strike a blow for liberty. The captain RN got a job with the Navy and the wing commander joined up again with the Air Force. There is no record of what happened to the captain Royal Marines but it is a safe assumption that he joined his unit as quickly as possible. The War Office, however, could not immediately find a job for the major, so he remained as the sole representative charged with the responsibility for the development of Inter-Service operations.

In December 1939 the Center was re-formed on the same scale as before. The financial position was still unsatisfactory. Expenditures were made from the annual grants of £10,000 (\$40,000) from each service, as has been noted previously. It was not until a much later date that the financial position was put at all firm. As late as May 1940 approval had to be sought from the Deputy Chiefs of Staff for the Inter-Service Training and Development Center to purchase:

One assault ladder costing £11 (\$44.00) One handcart costing £15 (\$60.00)

In April 1940 the Naval and Military members of the Training Center were called in to assist in the preparations for the Narvik operation, conceived as a reply to the German seizure of the western coast of Denmark and Norway. That this German move was of the most serious consequence is perfectly obvious when the facts are examined. In World War I the strategy of the war was dictated by the 400-mile Allied Front stretching in an unbroken line from Nieuport on the North Sea to the Swiss border. Since the Straits of Dover were held by the Royal Navy, it remained for them only to close the comparatively narrow waters between the Orkneys and



Mark IV tank with British crew leaves U. S. built LST. American built equipment surpassed English.

the Norwegian Coast in order to deny the waters outside the North Sea to Germany and her allies. However, by the German coup in April of 1940, the blockade was extended and flung back on Iceland and the Denmark Strait. The expedition to free Norway from the Germans was mis-timed, ill-equipped, and uncoordinated. It was for this operation, and because Royal Marine personnel were not available, that the War Office had raised 12 Independent Companies (which companies subsequently formed the nucleus of the Commando organization). Only six of these companies finally got to Norway where two landings were carried out, the first at Herjangs and a later one in the Ronjbak Fiord, near Narvik. The Navy bombarded what coast defenses there were and then the attack went in. The landing craft employed amounted to four LCAs, five old water jet-propelled LCMs, and one new LCM. To get the tanks to the target it was found necessary to embark some in a battleship, which is not too economical employment for a capital ship and is an odd place to find a tank. The landings were made with tanks in LCMs in the assault; the infantry followed up in the LCA. Naval gunfire support could not continue once troops were ashore because of lack of necessary communications. The Narvik expedition was doomed to an inevitable failure from the moment of its inception and, beginning on 2 June and continuing for five successive nights, the entire force was evacuated.

It was the last attempt to land a British force on enemyoccupied shores without adequate air cover. After the operation an attempt was made to tow the landing craft back to England, but bad weather set in and they all had to be sunk. As a footnote to this dismal proceeding it might be noted that the sole remaining number of Inter-Service training and Development Center, the major, who was acting as Operations Officer for the expedition, was badly injured when the plane in which he was traveling crashed.

After Dunkirk, where operational losses reduced the landing craft to four worn-out LCAs and one LCM in like condition, the Prime Miniser realized that some research and coordination in amphibious operations technique was essential if the British were ever to return to the continent of Europe. In June 1940 Gen Bourne, Royal Marines, was appointed as Director of Combined Operations. The more immediate task given to him was to boost morale by raiding the enemy-held coast; this had the object of harassing the enemy and causing him to disperse his forces. The six Independent Companies raised for, but not employed in, Norway, were available and 10 Commandos (425 men in a Commando) were in the process of being formed. The Independent Companies and the Commandos were placed under Gen Bourne's command.

AT THIS TIME 48 LCAs, 30 LCMs, and eight support craft were under construction, but no arrangements had been made to establish a naval organization to man and serve these craft. This unsatisfactory position was not improved by the fact that the Admiralty, which was then fully extended in the defensive phase of the war, had stated that, owing to the desperate need for destroyers, escorts, mine-layers and similar ships, no priority could be given to the landing craft then under construction and no future construction of such craft could be undertaken.

However, Gen Bourne was determined to carry out his directive with whatever means possible and the first raid took place on 23 June 1940 at Boulogne. This initial raid was quite a muddle from start to finish, although the party did not get ashore and did get back. Since there were no proper landing craft available, the raiding party was transported in RAF crash launches; and since there were no Navy crews available, the crash launches were manned by civilians. As the crash launches closed the target the civilian crews took an increasingly poor view of the whole proceeding and were vastly concerned whether or not their particular trade union would approve of such nonsense. The action ashore was not without its incidents. At one point the officer in command of the expedition, while on a personal reconnaissance, bumped smack into a German cyclist patrol. All hands were equally astonished but the British officer recovered his composure first and covered the enemy with his tommy gun. But while waving them in the direction of the beach the drum magazine became detached from the gun and he was left defenseless. Luckily the Germans seized this opportunity to take off in one direction while

the officer made good his retreat in the opposite.

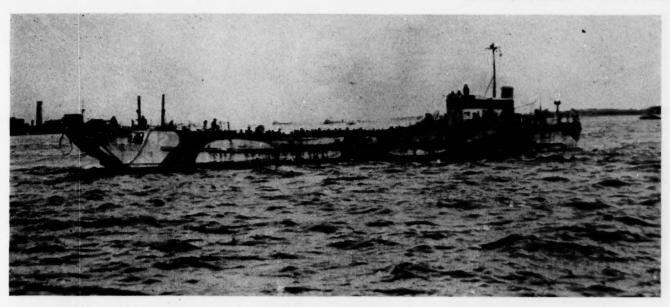
In reply to a query from the Prime Minister as to what landing craft were required to be built in order to carry out offensive raids, Gen Bourne asked for 93 LCAs, 106 LCMs, 25 LCTs and 4 LSIs. The request for LCTs was undoubtedly prompted by the tremendous successes that German armor had enjoyed in the Battle of France and so, for the first time, the LCT progressed from the blue-print stage to formal production order stage.

Combined Training Centers were established in 1940 for the purpose of indoctrinating troops (usually Commandos and other specialists) in the black magic of amphibious operations. In the United Kindom one Combined Training Center was set up at Invernay in Scotland with a training center for naval craft nearby. Subsequently a Combined Training Center was set up in the Middle East.

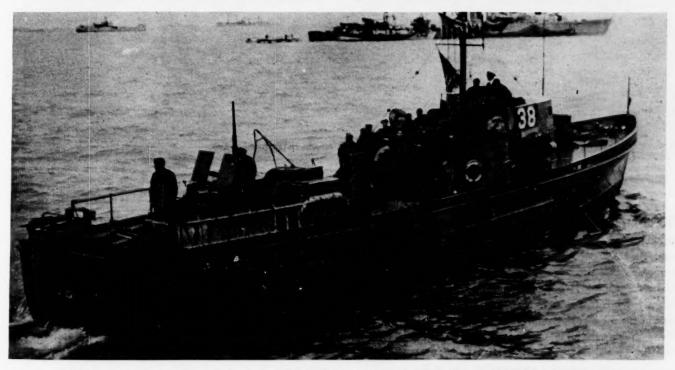
THE INCONCLUSIVE DAKAR AFFAIR took place in September 1940 and although no landings as such took place, two very important lessons were learned as a result of that expedition. One was the absolute necessity for adequate and efficient communications afloat, and the other was the necessity for a special headquarters ship. The Landing Force Commander for Dakar was embarked in HMS Devonshire. While underway to the target and only a few days distant, the Devonshire sighted some enemy ships and, true to the best Nelson tradition, promptly gave chase. Thus the Landing Force Commander, vainly protesting at such high-handed measures, was hauled away from his command at flank speed. A stern chase is a long chase and he rejoined barely in time for the opening phase of the unfortunate operation: no landings were made.

Gen Bourne was succeeded at Combined Operations Headquarters by Adm Sir Roger Keyes who inherited all the headaches and vexations that had plagued his predecessor. The difficulties of this period were very great; Adm Keyes had an intense desire to get on with his work, but he was continually frustrated by the shortage of materiel and personnel. Reading between the lines it might also be suspected that the services in general were not too concerned with such a fancy business as amphibious operations, perhaps considering them not quite commensurate with the serious and parlous business of fighting the war. In any case, the Admiralty were faced with continual requests on their all-too-few ships and consequently had very little to spare. Nevertheless, a whole program of raids were planned, few of which actually took place.

In September of 1941 Field Marshal Dill, the then Chief of the Imperial General Staff, stated flatly that, if a return to the Continent was ever to be expected, large numbers of tanks would have to be landed and that the existing LCT was much too small for the purpose. About



British tank landing craft. Early amphibious operations taught English value of this type craft.

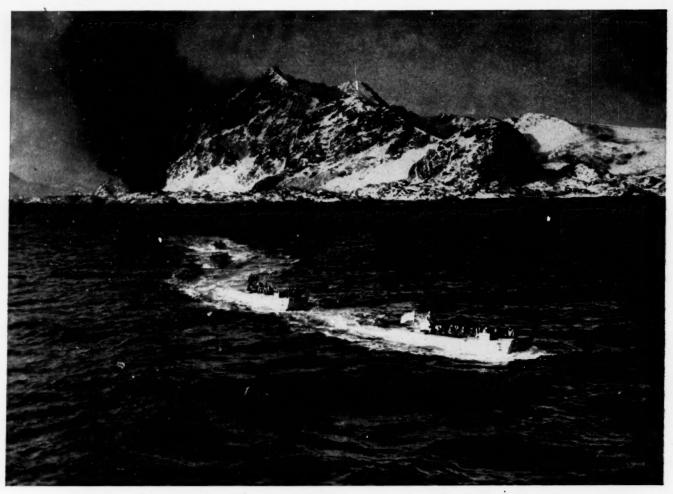


British converted American-built control landing craft and used them as lead-in navigational crafts for landing boats, to mark line of departure, for traffic control, and hydrographic surveys.

the same time the Joint Planners of the Chiefs of Staff Office produced a paper stating the requirements for a return to France. They estimated that the initial assault would require 13 infantry divisions, three armored divisions, and would require a lift of 2250 LCTs. [In the actual event the Normandy landings involved a total of 7½ divisions (including airborne) on D-day and 4000 naval vessels, not counting minor craft, supported the invasion.] The Joint Planners' calculations caused considerable consternation because the construction of such

an invasion fleet was entirely outside the scope of available British resources. As a matter of fact, it was not until the United States with her tremendous industrial potential actively entered the war that the prospects for the invasion of the Continent turned from a wistful dream to an eventual reality.

In October of 1941 Adm Louis Mountbatten succeeded Adm Keyes and was given the title of Chief of Combined Operations. In order to ensure true unity of the services he was also given equivalent rank in the Army and the



British troops leave Lofoten Islands, Norway, after destroying oil tanks. Raids such as this one convinced English of necessity of developing larger landing craft for amphibious operations.

Royal Air Force. Adm Mountbatten was directed to continue raiding the coast of France as much as possible and to begin preparations for operations on a larger scale.

In August of 1942 the Dieppe raid was carried out, mainly by Canadian troops. The Dieppe raid remains one of the most controversial operations of World War II. Even though the official reports have been published, it is still not quite clear as to just what was the exact purpose of a raid on such a scale (6000 men and a battalion of heavy tanks). The casualties of 65 per cent of the total force caused an intense public reaction; memories of Gallipoli were renewed. The official Allied communiques issued after the raid stressed "that as a combined operation the raid (Dieppe) was a successful demonstration of coordination of all three services." It is difficult even now, when all the facts are available, to find much justification for the Dieppe raid. Although the casualties at Tarawa and Iwo Jima were high, these operations were both necessary to the planned strategy for the westward drive to the Japanese home islands and served as vital stepping stones for subsequent operations. However, no Allied amphibious operations of any size or importance on the Atlantic front followed the Dieppe raid, except for a few Commando raids, until almost two years later and then on a vastly different scale. Aside from the many lessons learned such as the need for really close naval gunfire support, adequate joint communications, the cost of attacking directly into a built-up port area and many others, it also showed conclusively that there is neither profit nor future in sending a boy to do a man's job.

As a result of the North African landings in November, 1942 the lesson was taught that prolonged supply over the beaches may be necessary as ports may take a long time to capture by flank attacks; from this grew the idea of the Beach Groups (Shore Party) to handle and move the supplies across the beaches to inland dumps. The necessity for adequate beach reconnaissance was also learned and to meet this need was born the Combined Operations Pilotage Party (equivalent of our Amphibious Reconnaissance units). Finally, the absolute necessity for close Inter-service and Inter-Allied planning and cooperation was once again brought to the fore.

This latter lesson should have been one of the most obvious and valuable lessons of the ill-fated Dardanelles campaign of a previous generation.

Adm Mountbatten was relieved in 1943 by the young and colorful MajGen Laycock of Commando fame who retired last year at the ripe old age of 42.

The amphibious operations continued with valuable lessons being derived from each; in Sicily the importance of the Beach Groups was reaffirmed, the DUKW and LST made their initial appearance in a major role and the effectiveness of naval gunfire against ground targets came as a surprise to a certain school of thought which was inclined to write off NGF as relatively ineffective in this role. On the Licata beaches an enemy armored counterattack with tanks reached a point "from which they could fire on the beaches and at the ships standing by. When this tank attack developed the American cruisers and destroyers moved in and engaged them with direct fire." The armored counterattack was broken up. Had the naval gunfire support been less effective, or had there been none available, it is probable that the landing force would have been overrun and thrown back off the beach.

Salerno showed the value of carrier-based aircraft supporting ground operations, although the duration of the support so furnished was, by our standards, limited. At no time during World War II did the British have the resources in carrier-based aircraft that enabled American carriers to continue "on strike" for a month at a time. Salerno also emphasized a lesson learned at Dieppe and confirmed many times in the Pacific; i.e., to rely on surprise to get ashore, rather than an adequate preparation, and then to fail to obtain surprise may jeopardize the entire landing; at Salerno there was no adequate pre-landing preparation and there was no surprise. Salerno is a good example of how the range of land-based fighter aircraft can affect the choice of a landing area. The choice of landing areas on the mainland of Italy was confined to a circle whose radius was the operational radius of fighter aircraft based on recently captured Sicilian airfields. The true flexibility of air power is realized only when aircraft are not tied to an immovable land base, but are free to operate at will —based on adequate carriers.

ANZIO FOLLOWED SALERNO and was conceived as an operation to speed up the capture of Rome and to assist the main land armies in their move up the length of Italy. The initial landing on 22 January 1944 was virtually unopposed but, unfortunately, the Landing Force Commander (an American, by the way) failed to exploit this initial success. The Germans were thus given time to hem in the beachhead so strongly that a breakout became impossible. There were two lessons. First, the vital importance of maintenance over the beaches, first

recognized in the North African landings, was re-emphasized. Tonnages handled over the beaches were so great that Anzio became the equivalent to the third largest port in the world. Secondly, the prime importance of exploiting initial success was brought home with tragic clarity. If the troops had pushed on after the initial, unopposed, landing, the entire Italian campaign would have been altered. It was a lesson painfully learned years before and then forgotten, for the Gallipoli operations offer an excellent example of where lack of initiative and failure to exploit success proved fatal. The landings at Sulva Bay were a success, but the commander failed to exploit forward and seize a vital ridge, thus allowing the Turks time to deploy and subsequently halt all further attacks.

Failure to break out of the Anzio beachhead with the consequent requirement for continued maintenance of the landing force over the beaches had an unfortunate strategic effect. It delayed the release of the vital LSTs for Operation Overlord—the invasion of Europe—and this was one of the reasons why that operation was delayed until June 1944. Overlord was planned on three major premises; i.e., that the overall strength of the German Air Force would be reduced, that the number of German divisions in France would not be substantially increased and, lastly, that some measure of shelter water could be provided in order to permit prolonged maintenance over the invasion beaches.

AN ADDITIONAL PROBLEM was presented by the presence of coastal defenses (batteries, guns, infantry positions, and beach obstacles) on the invasion coast. These beach obstacles were reckoned to be a most serious problem; consequently, it was decided to alter the time of H-hour, so that the demolition parties could clear passages through the obstacles before high tide covered them, thus rendering their neutralization virtually impossible.

The conditions mentioned above were all met with conspicuous success. The combined Anglo-American air forces effectively nullified the German air effort and there was no serious interference at any time during the operation.

The Germans did increase the number of their formations in France in the course of the Allied landings, but the interdiction, by far-ranging aircraft, of road and rail communications strictly limited their movement. Moreover, a very successful deception plan forced the Germans to keep large forces east of the Seine. In point of fact, even 48 hours after the landings had commenced, Hitler was convinced that the Normandy landings were merely a feint and that the main assault would be in the Pas de Calais area. He was so positive on this score that he directed that no formation of division size or larger would move without his express personal permission.

The construction and placement of the artificial har-

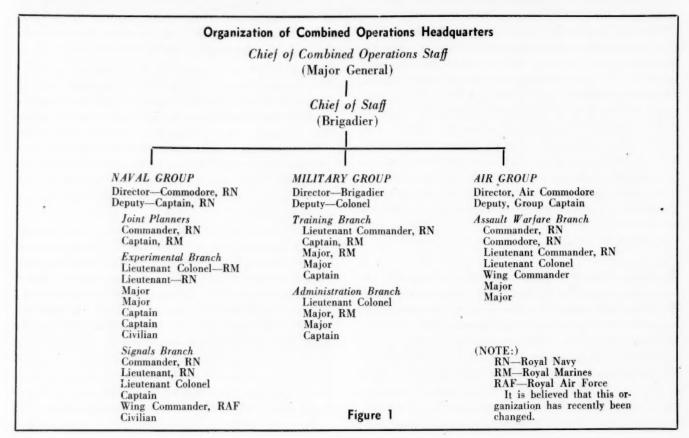
bors and breakwaters—"Mulberries" and "Gooseberries"—was successfully accomplished and proved of considerable value in maintaining a steady flow of men, supplies and equipment to the beaches even when the weather deteriorated on D plus 13.

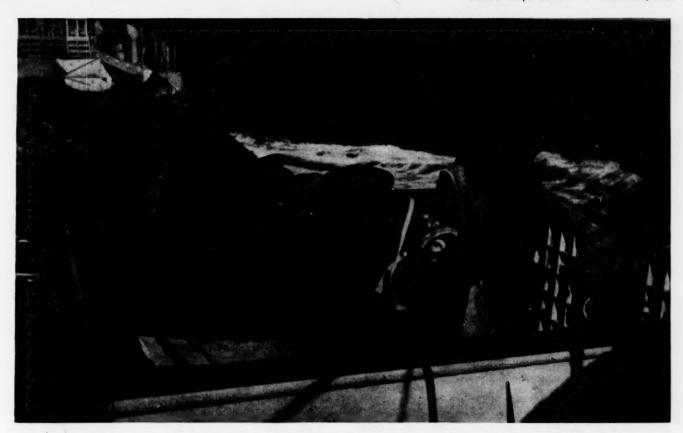
So far as the coastal defenses were concerned the lowlying cloud on D-day in most areas prevented the heavy bombers from carrying out their visual bombing. However, the naval and air bombardment that was carried out effectively disrupted enemy communications and the actual landings took place with fewer casualties than had been expected.

As a result of the failure to capture German-held ports as soon as anticipated, history repeated itself. Like the Anzio operation, maintenance over the beaches was required longer than had been anticipated and the release of landing craft and ships was consequently delayed. British plans for operations against Japan had been predicated on the assumption that the Overlord landing ships and craft would be available for re-deployment in November 1944. In actual fact, no British LCT were released until September and some were still being used when the Germans threw in their hand in the Spring of 1945.

Shortly after the Normandy landings had taken place the Combined Chiefs of Staff decided to carry out landings in the south of France. This operation had been cancelled previously because of the growing requirements of the Overlord Operation. The assault which went in on 20 August 1944, employed carrier aviation on a larger scale than had heretofore been employed in the European theatre, but still nothing to really compare with the usual Pacific drill from late 1943 onwards.

The final amphibious operation of the European war took place on 1 November 1944 when the Royal Marines, three Commandos strong and supported by various special and service troops, assaulted Walcheren. It will be recalled that the Second (British) Army in a brilliant dash had seized Antwerp with an armored division. Having lost Antwerp, the Germans sought to salvage something by clinging most stubbornly to the formidable defenses they had erected on the Scheldt estuary which connects the vital port of Antwerp with the sea. The last-and strongest-of these defenses were the great batteries (up to 220mm established in the Westkappelle dike on the island of Walcheren. The assault on Walcheren in many respects resembles an assault on a castle in the Middle Ages when the stone walls were breached and the men-at-arms fought their way into the keep. RAF Typhoons breached the dike with earthquake bombs and the attack went in through these gaps right in the face of very heavy opposition. It is worth noting that the Walcheren show was the largest and most important operation that the Royal Marines executed in the European theatre and is cast in the same gallant mould that produced Zeebrugge in World War I.





Royal Air Force flight lieutenant, Royal Navy lieutenant, and officer of the Royal Armoured Corps study a map showing position of beaches on the bridge of a British tank landing craft.

When V-J day came in the late summer of 1945, the science of amphibious operations in the British service had made great strides from its feeble beginnings in the period before the war. Starting from practically nothing, a workable efficient technique had been evolved to deal with the complexities of what has been repeatedly called the most difficult operation in war. The fact that the technique produced was successful is testified by numerous landings from the Mediterranean to the coast of the Arakan. The fact that an American might not subscribe completely to all aspects of British doctrine (such as their insistence on a system of joint command, etc.) is beside the point; the fact remains that their system worked for them.

TODAY EFFORTS ARE BEING MADE to insure that the study and technique of amphibious operations does not fall, by default, into the discard. Combined Operations Headquarters has been charged with this responsibility, but there is no central executive authority. Each Service is responsible for its own part of combined training with the Chief of Combined Operations Staff acting as an advisor and coordinator of basic training policy.

But before proceeding further with this discussion it might be advisable to pause for a moment and examine the composition and detailed mission of this Combined Operations Headquarters. (See Figure #1).

At the present time the British define "combined operations" as those "involving the integration of sea and land forces with associated air support." Operations in which only land and air forces are engaged are not included.

Under the general direction of the Chiefs of Staff, the Chief of Combined Operations has the following general mission to fulfill. (Ed: Later information indicates that Combined Operations Headquarters is now controlled directly by the Minister of Defense, who acts on the advice of the Chiefs of Staff in council.)

- Study tactical and technical problems of Combined Operations, and formulate doctrine, staff targets, development requirements and staff requirements.
- Advise on the planning of, and training for, combined operations.
- Coordinate combined operations training policy and experiments in all theatres and direct Combined Training and Experimental Establishments at home.
- 4. Initiate demands for research and stimulate action for the development of all forms of technical equipment including ships, craft, and vehicles used in combined operations. Coordinate through the Service Ministries (War, Navy, Air) the development of such equipment in regard to the problems of the

discharge of amphibians or vehicles from ships or craft in combined operations. (Corresponding duties are assigned regarding aircraft only insofar as matters peculiar to combined operations are concerned.)

- 5. Coordinate the development of combined operations communication material and technique.
- 6. Control Commando units and Combined Operations Small Raids Organizations when carrying out combined exercises, experiments and trials in the United Kingdom, except during such time as the whole or any part of these forces are handed over to a Force Commander. Lay down the training policy and technique for these units at home and abroad.
- Advise on the tactical application of Combined Operations technical equipment for major river crossings and in this respect maintain direct liaison with the Specialized Armor Development Establishment and other agencies concerned.
- Advise on defense against a combined operation, insofar as the technical aspect of the combined operations is concerned.
- THE PRINCIPAL AGENCY to assist in the necessary training is the School of Combined Operations, located in North Devon. This establishment has been designated as the center for study, instruction and training in the principles, tactics and technique of combined operations. Included herein are schools for training communicators and naval gunfire liaison officers. In addition there are several smaller activities engaged in training raiding parties, beach reconnaissance parties, and units skilled in

making difficult landings over cliffs, through heavy surf, etc.

Combined (amphibious) operations are not, in the British Service, the responsibility of any one service, but a joint responsibility of all three services—a condition which leads to all the ills to be found in a system of joint command. Combined Operations Headquarters, moreover, does not itself have an appropriation of funds or personnel; instead, each of the three services, according to its interest and assumed responsibilities, includes in the annual estimate an allocation earmarked for Combined Operations Headquarters. The weakness of such a system is obvious: Combined Operations Headquarters is completely dependent on the "generosity" of the three services. If the Defense Appropriation is reduced, it is reasonable to assume that each service will devote the available money to battleships, tanks, or aircraft, rather than curtailing those items in favor of contributing to an activity whose legitimacy even today is not too firmly established. This, in fact, is what happened in August of 1947 when England was faced with a most serious financial crisis. The recommendation was most strongly made—and just as strongly resisted—that a drastic reduction be made in Combined Operations Headquarters and its attendant establishments, to leave only a token headquarters and one school in existence. With additional financial crisis certain to be encountered again and again during the following months the future of the three services in general and Combined Operations Headquarters in particular may be somewhat meagre. Since, as noted above, amphibious operations are not squarely the responsibility of any one service, the subject tends to take on the aspects of an orphan child dependent on the

British troops work in water up to their waists unloading stores after making landing just after dawn in Sicily. Meanwhile beach roads are being prepared for heavy and light traffic.



indulgence and generosity of older members of the family—and in depression times the orphan may well go to the wall.

There is much to be learned by tracing the erratic course that amphibious operations followed in the British Service during the period between the two wars.

First we see that the Dardanelles campaign had given the amphibious operation a stigma from which it suffered for years. In most military circles it was generally accepted as an uncontroversial fact that a landing on an enemy shore, defended with modern weapons, was simply not feasible.

Whatever the reason, the development and study of amphibious operations for all practical purposes was allowed to starve and die. The responsibility for the development of the tactics and technique for an amphibious operation rested squarely with no one service; and, as is always the case with specialties in the military service, unless there is someone specifically charged with developing it, the speciality dwindles away and eventually is seen no more—it ceases to exist.

THE ROYAL MARINES, the logical branch to be charged with the responsibility for amphibious operations, never were able, due to a restricted interpretation of their mission, to furnish the Royal Navy with a counterpart to the Fleet Marine Force. Again and again in World War II from Narvik onwards, had Royal Marines been available as an advanced landing force, properly trained and equipped, time, lives, and money could have been saved. This was no fault of the Royal Marines; they had been diverted by higher authority who considered their proper function to be that of manning minor landing craft, manning ships' guns, and furnishing personnel for the beach brigades.

But a trained advance landing forces does not simply "happen." It is the result of continuous, painstaking, integrated study and practice, so that when the day comes when action is required there is no delay, no confusion, no failure. The entire course of the war might have been altered had there been available a proper Marine landing force on that day in 1940 when elements of the Home Fleet stood in to Trondheim Fiord and shelled the city, at the time most lightly held.

The story is almost the same with respect to naval aviation in the British service. The radius of action of the Royal Air Force is, of course, measured in miles from a land base. But the radius of action of carrier-based aircraft is almost unlimited. It is fair to say that the provision of naval air support for ground operations received little, if any, study prior to World War II; thus we see that this employment of naval aircraft, so vital when operations are taking place beyond the range of land-based air, grew from practically nothing. The chief lessons learned by the British, and they came the

hard way as a result of bitter experience, were that specialized training, communications, and material was required—and in the materiel category it was found necessary to produce special types of aircraft together with the carriers. It was also learned that to provide the most effective close air support for an amphibious operation, it was essential that the pilots concerned know something about what goes on on the ground beneath them. Just as in the case of the landing force, so in the case of the necessary aviation, an integrated, planned, continuing organization is a categorical requirement for success in amphibious operations—and such organizations do not spring into being over night when the bugle sounds.

WHAT, THEN, is the answer? It is not believed that a Combined Operations Headquarters, such as employed by the British, represents the best answer. Such a Headquarters, in theory, represents an ideal solution. But like so many theories, in practice it is not quite so ideal. Belonging to no one in particular and belonging to everyone in general, it is neither fish nor fowl nor yet good red herring. Dependent on allocation of funds and personnel from all three services, it is constantly in danger of being reduced to nothing in direct proportion to the extent of the cuts in the defense appropriations. When such cuts occur, and they are frequent in the piping times of peace, the Navy thinks first of ships to be built, the Army thinks of their tanks, and the Air Force is concerned for their latest jet aircraft—and no one has much time to spare for amphibious operations as such. The result is inevitable—the science of amphibious operations is allowed to slide gradually into an academic niche from which it is removed annually, for a few days at a time, to satisfy a requirement in a staff college syllabus. It would not be amiss to recall the lines written by a veteran who served with the Duke of Marlborough:

"God and the soldier we adore In time of danger and not before; The danger passed and all things righted, God is forgotten and the soldier slighted."

The same might be said about amphibious operations. The lesson is plain for all to read.

What of ourselves? The United States Marine Corps has specifically been assigned the task of developing the tactics, technique, and equipment for amphibious operations; in addition, there is maintained, in the Fleet Marine Force, the necessary troops and planes to carry out our particular mission of an advanced landing force. This FMF contributes a not inconsiderable degree of efficiency to the concept of the balanced fleet which is such an integral part of our nation's security. Both in theory and in practice the Marine Corps is assurance to the United States that amphibious operations remain an effective available weapon.



Training the Barracks

Although men who meet themselves going on and coming off guard are not eager to tackle the training grind, a successful training program must be implemented if a sizable portion of the Marine Corps is to be prepared for combat duty

THE MOST TRYING PROBLEM OF PRESENT DAY GUARD detachment commanders is maintaining their command in a state of training and physical condition so that it could function in the field as an efficient infantry company upon 48 hours notice.

It is easy enough to consider that all marines have received basic infantry training in boot camp and let the training program slide along on that theory, but it is no secret that our current boot camp graduates certainly are not polished infantrymen. And there is no reason to expect that future recruits will be capable field soldiers as a result of boot camp training.

Naturally, the ideal situation with respect to a ready Marine Corps would be to send the recruits from boot camp to FMF field units before any of them become junior plank-owners. However, since the situation is not ideal and probably will never be, it becomes the duty and task of small unit commanders to keep a sizeable portion of the Marine Corps prepared for combat duty.

It is easy enough for the commanding officer to tell the exec to comply with Letter of Instruction 1445 and for the latter officer to sit down and put on paper a momentous training schedule for the ensuing six months. However necessary good planning may be, it is my firm opinion that no training schedule succeeds unless the troops are inculcated with the spirit to learn and become proficient. This, I believe, is the fundamental problem and one that requires considerable scheming to overcome.

In the small barracks detachment manpower enters into the training picture. No person, however, sincere, enjoys being overburdened with jobs; so where officers, noncommissioned officers and men meet themselves going on and coming off guard they generally are not eager beavers to tackle the training grind—and any successful training program, at times, assumes the proportions of a grind, especially after you have been up half the previous night. Therefore it requires a driving power in the person of the exec to see that all available hands are present, and it requires something of interest to stir the learning powers once the men are on the scene.

In coping with the manpower situation I have found only two really successful ways of running the training schedule. If you are on a running guard, the most successful method has been to require all men not on post to attend school from 0830 until 1030 or 1100 on week days with liberty call for men not on post held back until after the noon meal.

The better method, as far as training is concerned, is to maintain a two-section guard. If necessary, this can be arranged by wheedling enough seamen from the navy and training them to man one of the interior guard posts. By doing this you are able to organize your command into platoons and squads and be assured that the same platoon, working as a unit will be on hand every other day for instruction and field problems. We have found that the field problems operate much smoother under this method, and the men learn the teamwork so necessary in the field much sooner. It also is much easier to account for the men and keep training records if they are on two-section guard duty and organized into platoons.

Then there is the problem, probably dating from Col

Detachment

By Maj James A. Pounds Archibald Henderson's era, of giving the special duty men a semblance of field training. At the first mention of getting the office help into the field for half a day there is an immediate scream of anguish from the supply officer, first sergeant, disbursing officer, mess sergeant and assorted others-not to mention the police sergeant who immediately believes the old man may stalk through the barracks with a bad hangover that morning. The only successful way to overcome this obstacle is, with the commanding officer's backing, to issue an order that half of each special duty section, listed by name, will report for school on Tuesday morning, and the other half, also listed by name will attend on Wednesday morning. Then hold roll call on the respective mornings, accept no excuses for failure to attend and require persons missing the period on legitimate excuses to make up the instruction after liberty call sounds. The last mentioned requirement reduced our sick call quota to practically nothing on the day that the 12-mile forced march required by the Commandant appeared on the training

You can drive the marine into the classroom but you can't make him learn. In fact there are a few you can't entice, cajole or threaten into learning, but the vast majority will absorb a surprising amount if the subject matter is interesting and the various subjects are fitted together to make a complete picture.

Since no one man in a barracks detachment has the time, if the knowledge, to instruct all the subjects necessary for a well-rounded unit, we have assigned certain subjects to various noncommissioned officers and require them to become experts in their respective subjects. This, of course, requires the exec to make out the weekly





Promote interest in basic infantry training. Have men fire all weapons that facilities will allow.



training schedule with a sergeant of the guard roster in hand so as to schedule his subjects for periods when his "expert" instructors are off duty.

Unless the officer in charge of training gets out and hustles the training program of a guard company or barracks detachment will be reduced to lectures. From our surveys and examinations we found that purely lectures courses produced only about 25 per cent satisfactory results; whereas subjects such as combat drill and security on the march carried out entirely in the field had a penetrating effect on about 80 per cent of the men. And subjects on which we had moving pictures, field work, and lectures were passed by more than 90 per cent of the personnel.

When I became training officer of our barracks, I immediately launched an ambitious training program. Theoretically it was sound, but practically it was boring because we did not have the facilities for practical instruction. After two months and a few examinations we found that the men were learning the combat drill, security on the march and compass which were conducted in the field with definite practical objectives but were sadly lacking in other courses in which we had to resort to classroom lectures and simulated firing.

After making this discovery we interviewed a number of men. These men verified our opinion that they liked the field work in spite of the physical grind and believed they had learned to capacity from lectures. It was then a question of continual pounding of lectures until they absorbed a satisfactory amount or get out and find ways in which to enliven the subjects. We chose the latter course although it appeared difficult with the facilities at hand.

OUR FIRST STEP in the revived program was to hold several classroom sessions in which a detailed explanation of the division's table of organization was given and the part each unit played in a division operation. Diagrams of a division landing operation were drawn on the blackboard and the entire procedure explained down to the work of the individual squad. It was difficult to realize that a large percent of the command had never served in a Fleet Marine Force unit, had only a hazy idea at best how even a squad operated, and, even more surprisingly, was highly interested in the entire procedure from top to bottom. After seeing the complete picture one time the men were more interested in perfecting their own part of the play. The parts of the various companies and platoons were likened to a football team with all blockers required to carry out their assignment in order for the halfback to break through for a

After a thorough indoctrination by lectures, get the men out of the squad room and into the field.

sizeable gain. This seemed to impress our recent high school graduates.

One way and another, we acquired enough .30 caliber ammunition so that each man in the detachment could fire fifty rounds with the light machine guns. The targets were placed at varying distances in the bay so the gunner could follow each burst, and the ammunition was spaced in ten round bursts. With actual firing as an incentive the men showed remarkably more interest than ever before in learning the machine gun. We also discovered that it was the first time that 80 per cent of our men had ever fired a burst.

By pointing out to the station executive officer and gunnery officer that the guard certainly should have adequate target practice, the command received authorization to fire all weapons once each month on the Navy's range and with Navy ammunition. Although the range had no 500-yard line, firing from 200 and 300 yards with the carbine, rifle, and automatic rifle proved far more valuable than snapping in. Men who had been unable to hit the well known bull in the posterior with a sawed off shotgun on the first outing were able to qualify when time to fire for record rolled around.

The final contribution made by the Navy to the detachment training program was the directive from headquarters requiring each naval establishment to organize a ground defense force. That gave our officers, noncommissioned officers and men an opportunity to do some practical defense planning and preparation right on the ground. The men derived some practical terrain lessons and a short course in interior communications from the plans. The directive also interested the Admiral in the Marine detachment's capabilities and resulted in a combat demonstration problem with blanks and smoke grenades for the Admiral. One platoon attacked the second which was ordered to make a planned withdrawal to a new position. The Admiral was pleased, and the two platoons argued for a week over who got killed and why.

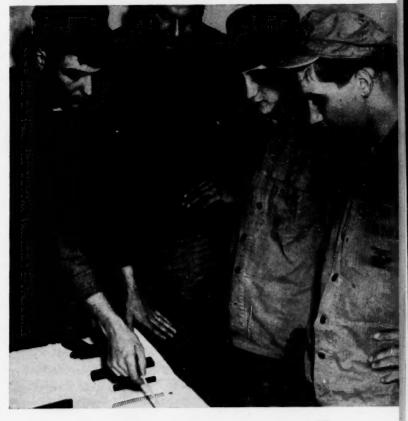
AFTER EXHAUSTING the naval establishment's sources of help we determined that in order to enlarge the scope of the training program a moving picture projector and training film would be necessary. Although the detachment does not rate a projector in the allowance, the Commandant authorized one on request. The Marine Corps Schools cooperated on film. When the first shipment of film arrived and the projector was pressed into service for the first time, the men would have been willing to pay admission. Even the embryo plank owners in the offices were sneaking in to see the training film which

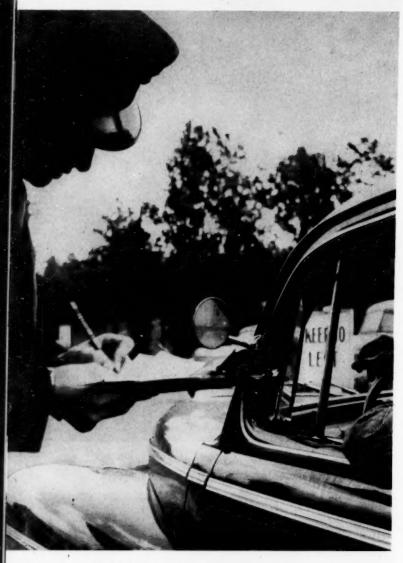
Attendance of the men must be checked and tests given regularly to determine progress being made.





Certain subjects are assigned various NCOs who are required to become experts in respective subjects.





That Marine sentry on the main gate may someday be between you and the enemy. Be sure he's trained.

were interspersed with movies of various Marine combat operations.

While waiting for arrival of the projector two of our men were trained as operators by Navy operators on the base, who also came up and helped set up the projector for its first use.

The projector was worth its cost in one subject alone. For some time we had attempted to put across map reading and aerial photographs with no maps or photos of the area in which we were working. The fact that we still have no maps of the area is a detriment to the program; but after showing the Marine Corps Schools' series of five films on basic map reading and following up with classroom work of our own with a map for each man, most of the command now is able to do a reasonably good job of map reading and certainly shows decidedly more interest in the subject. The men were then taken into the field and shown how they could make their own

map of a small area.

In addition to the basic subject films the projector makes possible the showing of artillery and tank subjects which broadens the military education and definitely increases the interest of the men in basic and specialized training. The value of a projector and training film cannot be over-emphasized.

ALL THE COMMENT above may seem elementary to the officer and veteran noncommissioned officer, but it is very easy for officers and men with considerable service to overlook the fact that a large percentage of present personnel have received a minimum of training and that every training program now must start from scratch.

In summary the following lessons were derived from handling a training program for guard companies and barracks detachment goups for the past two years:

1. The 1948 model marine either needs training or refreshing in basic infantry subjects.

The Marine Corps is faced with the psychological problem of promoting interest among the two year men lured in by college educations and face more of the same problem since the draft bill was passed.

3. That interest can be promoted by explaining the entire picture of a division operation and showing combat operation films. (A number of your present men have never seen or been involved in combat).

 The men must be required to attend schools and must be constantly checked for attendance and frequently examined to determine progress.

5. Interest in basic infantry training can be promoted by showing training film on supporting arms, and I firmly believe that the men who are exposed to varied and interesting training are more likely to ship over.

6. Have all hands fire every weapon that facilities and ammunition allowances permit. It is my personal opinion that a well-trained Marine Corps should have a considerably increased ammunition allowance for peacetime training.

7. Arrange for naval demonstration to promote interest. If at a naval air station, arrange for your marines to see planes in flight, on strafing runs, and firing rockets. If at a naval base take them aboard various ships and landing craft for inspections.

8. Get down to earth! Get out of the squad room and into the field as much as possible. The men like it, they stay in better physical condition—and they learn more.

9. Despite the SSN program and specialization, the best men—specialists or just plain line—are the marines who have received sound basic training and enough diversified training to have a fair idea of the complete show.

10. And don't forget when you are training them that you may depend upon these same men to keep the enemy out of your CP at a future date.

What has gone before: The 502d Parachute Infantry's mission in Operation Market-Garden promised to be easy, and might have been except for one "minor error in estimate." Originally evaluated as a platoon objective, the village of Best finally drew two-thirds of the regiment into a battle which, weeks later, found the Germans still holding out.

The value of Best lay in its two bridges, which spanned the Wilhelmina Canal and which would be needed in the planned sweep of Allied ground forces from the Belgian border to the north bank of the Rhine. For the initial assault on Best, regiment assigned Company H, of the 3d Battalion; and from this company, Lt Edward L. Wierzbowski's 2d Platoon was detached to capture and defend the bridges. H Company was stopped cold when they ran up against 1000 Germans where intelligence had placed only a few squads: Wierzbowski fought through to the bridges, losing men all the way, but was discovered by the enemy and pinned down. When, with 18 men, he finally dug in an all-around position, his battalion had given him up for lost.

Meanwhile, regiment (having finally become convinced that the opposition was much tougher than had been expected) had thrown the rest of the 3d Battalion and, on the following morning, the 2d Battalion into the attack on Best. The two-battalion attack went off unevenly, and LtCol Cole, beloved CO of the 3d, was killed. The only tactical effect was to complete the isolation of Wierzbowski and his beleaguered outpost who, at 1100, had seen the

highway bridge blown up in their faces but could not get word of this important fact to the main body. Later in the day, friendly forces in the shape of a British armored car and a patrol from the 3d Battalion broke through to Wierzbowski's position. The armored car appeared on the far side of the Canal, took some of the pressure off Wierzbowski, and gave him medical supplies. The car commander also promised to cover his platoon until help arrived. As for the patrol from the battalion, Wierzbowski told them to report the demolition of the bridge, and to bring back a larger force which could evacuate his wounded. But the patrol got lost on its way back. By the time Wierzbowski's report filtered up to battalion, it conveyed only the information that the bridge had been blown, and said nothing about the lost platoon.

But there was yet one more bright event that evening. A platoon from the 2d Battalion, finding a hole in the German defense, came through and entered Wierzbowski's lines. The two platoons then tied in together along the Canal and settled down for the night. Wierzbowski's men, completely exhausted, dozed in their holes and left it to the new arrivals to hold the position. This was a mistake. A German attack during the night routed the 2d Battalion men, and Wierzbowski awoke to hear them splashing across the Canal in flight. To complete his misfortune, the British armored car had withdrawn upon the arrival of the reinforcing platoon, so once again his group was left alone. Not being psychic, Wierzbowski couldn't foresee that the worst was yet to come.

The Fight at Best

By Col S. L. A. Marshall

Conclusion:

ON THE THIRD MORNING OF THE FIGHT AT BEST, AS the light began to break, the general situation of the American forces seemed for the first time to be on the upgrade.

During the preceding stages of the struggle, they had been fighting blind in the Zonsche Forest, with enemy forces either directly engaging them or harassing them with small arms and artillery fire from three sides.

These forbidding conditions were now gradually being absolutely reversed. The attack of 2d Battalion on the

prior evening toward the bridge along the southwest corner of the forest had almost wholly relieved the distress of 3d Battalion. Simultaneously, the latter had struck on its own account and patrols from Company I had crossed the highway to the westward, dug in on the far side, and put a block on the road.

In consequence, what remained of the enemy forces along the highway to the south of this point thereupon withdrew. To the north, however, the enemy was still lost in the fog of war and becoming a victim of his own communications. The word did not reach him that the

Part III: In the end they owed nothing to Regiment. They had pulled their getaway under their own power. This valiant band of men returned to arms greatly depressed by a feeling that they had failed to accomplish their mission

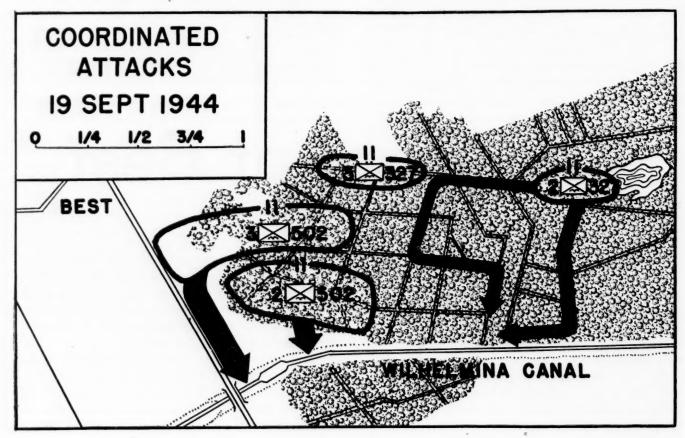
Americans had cut the road. On the stroke of midnight, an armored car with 40 men behind it moved straight into the Company I roadblock. The armored car actually had its bumper pressing against the logs when the Company I men along the ditches on both sides opened fire. Ten Germans were slain and most of the others were captured. The armored car backed away quick as a flash and escaped.

That night the American lines at bivouac had about the same ingenious pattern as a pretzel. 2d Battalion was fronted southeastward, set for defense, but ready to resume at 0600 hours its attack toward the bridge. Company G of 3d Battalion was backstopping this position. Company I was stretched from the forest to across the highway, confronting Best, and defending to the northwestward. Company H was in extension of the Company I line, but on a reversed curve which enabled its open flank to give partial protection to the troops which faced south and eastward. The mortars were in the center of the general position.

The one spot of unrelieved black in this otherwise

brightening situation was the plight of Wierzbowski's lost detachment at the bridge, of which Regiment still knew nothing. Materially, they had reached the end of the string, though morally, they were still in the fight. They had come to the last of their ammunition; most of their number were now either dead or made helpless by wounds. The one remaining chance was that Chappuis, attacking with 2d Battalion, would reach them in time.

This chance died almost at its moment of birth. The attack started on time. Immediately thereafter, the patrol from Company E which had learned about Wierzbowski the night before and then lost itself in the woods, reentered the Regimental lines, bringing the word that the bridge was down. This seemed to deny the attack any purpose, and it was stopped. Though we may remark with wonder upon the failure of this patrol to report the plight of the lost platoon, the incident is not exceptional. Troops are ever disposed to take a compassionate interest in the hardships of members of "their own" company or battalion while remaining quite indifferent to the fate of men from other units.



In their position next the dike, Wierzbowski and his men first looked at the morning through a mist so thick that they could see the ruined bridge only in outline. They were alone, but they were so tired that they made no move to redistribute themselves so as to cover the gap in their defenses caused by Motola's abrupt departure.

The light grew, and at last the sun broke through the mist, seeming to roll it up like a curtain.

Wierzbowski looked around him. Just twenty feet away, he saw a German officer. A line of men was following him. Wierzbowski yelled. Sgt Betras threw a grenade. Several of the others threw also.

But the enemy had beaten them to these same tactics and several grenades were already rolling down into the fox holes. Two of them hit the embankment of the large fox hole and rolled down among the wounded. Betras threw the first one out. Someone else threw out the other. A third grenade went wild.

The fourth grenade hit the machine gun and exploded directly into the face of the gunner, Pvt Laino, blinding him.

Pvt Lawrence Koller and Corman were together in a fox hole. A bullet hit Koller in the temple. He gasped heavily for a moment, then slumped and lay still, and Corman thought he was dead. He yelled for the aid man. Laino, too, was crying: "Aid man! Aid man!" But the one medic had sprung to help Koller, and there was no one, and no time, to help the wounded machine gunner.

Then the men saw another grenade loop over Wierzbowski's head, hit Laino on the knee, and roll off into his foxhole. They saw Laino, blinded as he was, reach down groping for it, and while they had their splitsecond agony of suspense, his hand found it and tossed it out, just before it exploded in mid-air.

THE NEXT GRENADE fell behind Pvt Mann. He sat at the back of the trench, a large trench holding six other men. His voice called "Grenade!" as the missile looped over and settled in the dirt. But both of his arms were bound from his four wounds of the day before and he could not reach for it. So he deliberately lay back on the grenade. It exploded into his back, blew fragments into the side and belly of Pvt Anthony Atayde and wounded Pvts Paxton and Wienz each in the hip. Mann said quietly to Wierzbowski: "My back's gone," and a minute or two later he died, without a groan or whimper.

For saving the lives of his comrades, Pvt Mann was posthumously awarded the Congressional Medal by a grateful government. The more perfect tribute was given by the survivors who said that his peerless courage during the three days had proved their chief rallying point.

One last grenade was thrown. It exploded a cloud of dust and sand in front of the position. The enemy came running forward. The men had kept asking Wierzbowski: "Do we quit or fight?" They asked no question this time, but he gave his answer. Their own last grenade was gone. Only three of the men remained unwounded. Either they surrendered now or all would be killed.

Wierzbowski said: "OK. This is the time." Pvt Anthony M. Waldt put a dirty handkerchief on his carbine and waved it. The fire ceased.

The men, including the wounded, were told to come crawling from their fox holes, and to continue in that posture as they moved westward along the side of the dike. The Germans had heard the noise of 2d Battalion's attack in the not distant foreground, and were fearful of attracting attention. But Laino was bleeding too badly to make the start. Wierzbowski told a German NCO about Laino, and he dropped his rifle, bandaged him, and helped carry him out.

Thinking Koller dead, when the surrender came, Corman dropped across him and played dead. Thus they lay there from early morning until 1630 hours, not moving. American artillery pounded this ground hard throughout the afternoon. A German machine gun crew arrived at mid-day, casually regarded the two men, set up their gun next the hole, and fired for several hours. When the general American advance over-ran this ground late in the day, Corman was still whole and Koller was salvaged. At least, there was still a spark of life in him.

The rest of the part, save one, were taken to an earth mound west of the highway, behind which the Germans kept them under guard and tried to doctor their wounds. The exception was Pvt Hoyle, who lagging a little behind the party and pretending that he was hard hit, got only so far as the road. There he dropped into a fox hole and pulled a few branches over him. Another enemy machine gun party took position within six feet of him and operated there for eight hours. He, too, was freed by the general American advance. He immediately found himself a rifle and a few clips and went back into the battle.

After having his attack called off, Chappuis had returned 2d Battalion to its line of departure. There he was twice counter-attacked during the morning, the Germans coming up the trail through the little wood where Duffy had had his misadventure.

In the interim, however, as Chappuis' weight had shifted more to the southwestward, Company G's position in the forest had become uncovered, and enemy forces, coming from the direction of the Drop Zone, began to press against its left flank. Lt Donald Irwin led a sally with the 1st Platoon in an effort to clear the company front of this harassment. As he gained the edge of the woods and broke out onto the open field, Irwin was hit



"... Wierzbowski looked around him. Just 20 feet away, he saw a Nazi officer. A line of men was following him. Wierzbowski yelled. Sgt Betras threw a grenade. Several others threw also ..."

on the head by a 20mm shell. For four hours he lay there, an easy target for enemy skirmishers who kept crawling to the edge of the wood to take potshots at him. SSgt Allen W. Jones, feeling that he would get the platoon slaughtered if he advanced it into the open to rescue Irwin, took on as a personal task the elimination of the enemy party. He crawled out beyond the lines and through the forest, keeping watch until at last he got a line on the source of the fire against Irwin. There were ten Germans, working together, most of them armed with machine pistols. He killed them one man at a time. Irwin had 14 bullet holes in him when his men were at last able to go out and drag him back—at least a little bit alive.

During all these hours, however, the "big picture" was changing momentously, British XXX Corps' main column was passing on the main highway to east of the Zonsche woods, and artillery and armored help were now at hand.

327th Glider Infantry Regiment, landing as the Division reenforcement, was ordered at once to advance in support of 502d Regiment. They got into action almost as soon as the march started. While 3d Battalion was moving across the flat country near Melenkampen, its

scouts got into a brush with an enemy force of 200 men advancing south to join the fight in the Zonsche Forest.

3D BATTALION wasn't expecting a meeting engagement and had no way of deploying in time to produce an envelopment, since both forces were moving in the same direction. But the companies attacked in parallel columns echeloned to the left rear, with all columns hitting at the enemy rear. The Germans fled in panic, leaving 75 prisoners and a number of dead. Those who managed to survive and escape this fight were caught in the grinder farther south in the Zonsche Forest.

For with the arrival of these fresh forces, the enemy groups which still maneuvered east of Best were now held tight in a giant man-trap. 327th came straight on and formed a line along the north fringe of the wood. The British armor was moving north on the road from Zon, thus preventing escape to the east. 502d Regiment was covering the road on the west and the Wilhelmina Canal barred passage to the south.

At 1100 hours a squadron of the 15/19 Hussars, from out the British column, was placed in support of 327th

Regiment by 101st Division, and 16 tanks were immediately dispatched to 502d Regiment for use in an attack by all forces which was set for 1415 hours.

Stopka and Chappuis conferred. The decision was that each Battalion would attack with six tanks. Company I would put a platoon behind three tanks at the left of the road, and Company G, similarly supported, would advance on the left of Company I. As this line came parallel to 2d Battalion, it would form with six tanks and extend the sweep. At the same time, 2d Battalion, 327th Regiment, would push two forces south and west through the forest from its northern extremity, continuing as far as the Canal. Turning its back to this movement, 3d Battalion, 327th Regiment, would advance north to deal with any possible attempt at reenforcement.

THUS THE PLAN. Company I's tanks happened to arrive first and the platoon jumped off before anyone could tell them no. The tanks at once shelled the wood with their 17-pounders. Fearing that his attack was going off half-cocked, Stopka went running to stop the advance of his right. Before he could bark an order, 75 Germans came out of the woods with their hands in air. Seeing in a flash that the whole situation was suddenly turning, Stopka saved his breath. The tanks and the platoon went right on along, and more men arose from the paths and ditches in the foreground. A few had to be killed by the fire; the majority were completely demoralized. Convinced that the "rumble to the tanks and the noise of their fire" had taken all heart from the enemy, Stopka called Regiment, saying: "Send me every MP vou have."

By the time the single platoon came abreast of Company G and the Battalion attack started as a whole, there were already 100 prisoners in the bag. 2d Battalion, taking the cue, had also thrown coordination to the winds and had lashed out with its six tanks without waiting for Stopka's line to come abreast. It had shaken 300 prisoners out of the woods before it was well started.

Chappuis, moving along with his battalion, was eternally impressed by the swift demoralization wrought by the arrival of the armor. There were only a few bitterenders who insisted on making the defeat blacker than it was by nature. Not once "but ten times," Chappuis saw men arise from the enemy position with their hands in air, only to be moved down by the machine gun fire of their comrades while they were trying to surrender.

In all parts of the Zonsche sector, the rest of the operation was hardly more than a mop-up. In two hours, 2d Battalion captured 700 prisoners. 3d Battalion didn't bother to keep a count, Stopka telling his men to let the prisoners sift on back and he would find some way to take care of them. A scratch detail of cooks and clerks was rounded up by the Battalion executive, Capt Frank Lillyman, to hold the bag until the MPs arrived. By

that time it was filled with 1100 of the enemy. Sweeping south through the Zonsche Forest, Company G, 327th Regiment, using two platoons, captured an additional 159 Germans, and killed "quite a number" without taking a casualty.

In the late afternoon, Stopka had a detail of his men take a census of the battlefield. There were 600 German bodies scattered over the ground between the southern fringes of the forest and the Canal.

The advance by the tanks and the infantry line went as far as the dike. Then Lt Baker took the Company I platoon to the west of the highway and cleared out the wood patches on that side for a distance of about 400 yards. But they did not go into Best. A force of about 700 of the enemy continued to hold out there during the succeeding days while Operation Market-Garden was being written off as a strategic failure because of the defeat at Arnhem. They still held Best during the succeeding weeks while 101st Division was fighting on "The Island" north of Nijmegen. It made no difference; the Corridor was safe, and these people weren't going anywhere.

There is one last note. While the battle went on toward its sputtering conclusion, Wierzbowski and his few survivors, in the position where they were kept prisoner behind the mound, saw wounded Germans flocking to the rear looking for first aid men. A few stopped at the mound to ask for help. One was the German NCO who had bandaged Laino that morning; he was now hard hit in the shoulder. They gave him such help as was possible.

FROM THE MOUND the Wierzbowski group was taken to a German field hospital between the highway and Best. When the tanks began to get in their strokes, the hospital staff became wholly demoralized, even though the attack was proceeding in the opposite direction. Wierzbowski and his men disarmed them and captured the hospital. Those who were not directly serving the wounded were taken along as prisoners when the group escaped to American ground.

So finally they owed nothing to Regiment. They had pulled their getaway under their own power. That made it all the more remarkable that this small but valiant band returned to arms greatly depressed by a feeling that they had failed. They felt badly because they hadn't taken the bridge. They were ashamed that some of their comrades had run in panic the first night. They were downcast because they had been prisoners for a few hours.

Having known them all and worked among them, I can think of no better ending to the story than that beautiful line written by Elliot Paul: "It was a privilege to be associated with such courageous men and their enemies will do well to be afraid of them so long as they are above ground."

In Brief

The Navy Department has announced publication of a new "Navy Manual of Veterans' Information" which contains a comprehensive round-up of the rights and benefits for Naval vets, both those discharged and those still on active duty. To be used as an official guide by all Navy personnel responsible for the readjustment of veterans, the manual contains information on various phases of discharges, separation papers, records, uniforms, decorations, mustering-out-pay, terminal leave, reemployment, medical care, and other rights and benefits entitled to vets. Copies may be obtained for \$1.50 each from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Details of mobilization plans which would give the government virtual control of approximately 1300 civilian transport aircraft are jointly under consideration by the Air Force and U. S. commercial airlines, it was disclosed recently. A complete outline of the mobilization procedure was made public by the Independent Air Carrier Association. The draft of the contract designed to provide contractors with the method by which the Military Air Transport Service will avail itself of commercial facilities to augment its own equipment has been tentatively approved by the Air Materiel Command.

The Navy has decided to issue discharge certificates to officers totally separated from the Naval Service. The policy was recommended by a joint armed services committee to bring the Navy in line with current Army and Air Force practices. The new Navy policy will be retroactive to February 1, 1948, but the Department estimated it will take from four to six months to mail certificates to all who are eligible.

Three separate officer procurement projects were announced recently by the Navy Department to fill a total of approximately 175 vacancies in the Line and Staff Corps. The Department wants approximately 50 women officers for Regular Navy billets—30 in the line and 20 in the Medical Service Corps; 25 young women doctors for intern training, leading to commissions in Naval hospitals; and 100 senior dental students as probationary ensigns in the Hospital Corps of the Naval Reserve.

The Navy disclosed recently that it plans a fleet of 28 high-speed aircraft carriers capable of launching the heavy and faster long-range attack planes now being developed. While the program is long-range in nature, the Navy said it could be brought to completion rapidly in event of an emergency. The force will be built around the 65,000-ton "supercarrier," a flush-deck, 1090-foot seagoing air-field able to handle a plane big enough to carry the atom bomb. It will also include three 45,000-ton carriers and 24 vessels of the 27,000-ton Essex class carriers now in service.

The Army is offering commissions to enlisted veterans who have had at least two years of college. To be eligible the men must be between the ages of 19 and 32, have had at least one year's service in any of the armed services between Pearl Harbor and June 30, 1947, and score 110 or better on the Army's General Classification Test. Men accepted will be given a 12-week training course and then serve two years on active duty. They can compete for Regular Army commissions.

Army Reserve officers whose possible future war assignment will be at the policy-making level are to be selected to attend economic mobilization courses in 17 major industrial cities during 1948-49. A total of 225 Reserve officers will be selected for the courses, with 15 in each class. In general, those officers chosen will be in the grade of major or above and will have had mature experience in military and civilian capacities.

The Air Force is flight-testing the two-place helicopter XH-15. Its bubble-like nose providing exceptional visibility, the XH-15 is designed for use as an observation plane, for special photographic work, and for aerial inspection of power or communications lines.

A new technique for flying, navigating, and landing under bad weather conditions, made possible with a precise electronic instrument, has been announced by the Sperry Gyroscope Company. The new instrument, called the "Zero Reader," eases pilot strain and reduces the need for periodic practice on instrument landing systems. It automatically pieces together the information from conventional flight instruments and presents their indications to the pilot on a simple two-element indicator.

The Air Force is planning to equip its air-sea rescue groups with a new high-speed amphibious plane. It has ordered 32 Grumman SA16A search and amphibious planes to replace the old twin OA-10, prototype of the Navy PBY or Catalina. The Grumman is a high wing plane with two Wright 1425hp engines and carries a crew of three. The cruising speed is 225-mph, with a maximum speed of 275-mph. The Grumman amphibian can carry four passengers or sixteen litter patients, or 4,100 pounds of cargo. Its range is from 600 miles to 4,000 depending on load and takeoff conditions.

Latest Navy entry in the all-jet aircraft field is the Douglas XF3D-1 Skynight, a twin-jet shipboard all-weather fighter currently undergoing flight tests at the Air Force test center at Muroc Dry Lake, California. Powered by two Westinghouse turbo-jet engines, the XF3D-1, with its electronic aids, is expected to be one of the most versatile of jet aircraft, capable of carrying out fighter and bomber missions of numerous types.

The Navy, it was learned recently, plans to equip all battleships and cruisers with permanent helicopter landing platforms as soon as practicable and replace all pontoon-equipped planes previously carried by such vessels with the rotary-wing aircraft. Helicopters are already in routine use by the Navy for the "plane guard" duty with aircraft carriers formerly performed by destroyers which trailed the big flat-tops at sea to pick up the crews of any plane forced down in the water.

The Navy has found a way to eliminate the telltale wakes left by vessels steaming at night, thus permitting greater security from "snooper" planes and enemy observers. It was found that because of oxidation, millions of minute organisms living in the sea give off a phosphorescent light when disturbed by a ship's propeller. It was also found that the war-developed dye which frightens away sharks would cover the glow, making it invisible from the air as well as from the surface.

Keeping step with the Army, the Navy announced that it will spend 30 million dollars to make permanent its 7,000-acre guided missile laboratory at Port Mugu, California. The project is scheduled to be completed in 1951, and will have facilities for testing buzz-bombs, rockets and other push-button war equipment.

Much new equipment, ranging from a new, lightweight, fully automatic rifle to revolutionary new reducing pills, and from a new light tank to pocket warmers in new Arctic clothing, will begin to filter into Army units within the next few months. Also included in the new equipment are a modern transport vehicle, and antiaircraft directors with trackers for protection against new high-speed jet and other planes.

The Air Force will use B-50 bombers, one of its newest type bombardment planes, in training operations in Alaska this winter. A recent Air Force announcement said that three five-plane units of the B-50s would rotate on training missions in the North with B-29s. The exercises will extend from 1 November to 15 March. This will be the first time the B-50s have been in the far Northern area. The training operations will be carried out by the 43d Bomb Wing, a unit of the Strategic Air Command based at Davis Monthan Base, Tucson, Arizona.

"Quadruple-threat super-specialists" are being trained by the Strategic Air Command of the United States Air Force. In addition to being an expert long-range bombardment pilot, the new specialist also will be a qualified navigator, bombardier, and radar observer. He will be able, in a pinch, to fill any of these assignments in air combat, particularly in some of the fast new jet bombers which will carry crews of only three or four.

Technical and professional specialists in such fields as aircraft inspection, airborne signal repair and maintenance, ground safety, and meteorology are eligible for reserve commissions, the Air Force announced recently. The vacancies range from second lieutenant to colonel; age limits are 21 through 57. Except in the event of mobilization, officers will not be called upon unless they specifically apply for duty. Previous military service is not required.

The Navy revealed recently that it will reach a strength of 14,500 planes by next July and that it is now testing a high-speed, twin-jet, tailless fighter. The new Navy fighter is the Chance-Vought XF7U-1, a flying wing type now under test at the Patuxent river naval air test center. In order to reach the 14,500 plane air force by next July, the Navy will withdraw 3,000 World War II planes from storage.

Amphibious Assault Artillery

By Maj Earl J. Rowse

IN THE AUGUST, 1948, ISSUE OF THE MARINE CORPS GAZETTE, LtCol Arthur J. Stuart presented one of the glaring weaknesses — perhaps the glaring weakness — of our amphibious doctrine in the past war. To quote from LtCol Stuart's article, this weakness was—

"Once the assault infantryman of the last war had crossed the foreshore, he stood essentially alone for a very definite period of an hour or more until effective support was built up ashore."

In discussing the role of the field artillery arm in supporting the beach assault, LtCol Stuart had this to say—"The important point is that everything must be tried, and the solution somehow found, so that artillery, like all arms in amphibious warfare, can participate in and support the beach assault." The purpose of this article is to present a possible solution to the above and, perhaps, to start a trend of thought which will produce the acceptable solution to this important problem. We cannot afford to gamble in the future as we so successfully did in the past. In our next assault landings, we must hold all the blue chips in our poke and have the deck stacked in our favor.

Why was it in the past war that the field artillery could not support the beach assault? Why was the field artillery—the Marine Division's primary, most powerful, and only organic supporting arm—weakest at the most crucial time? These questions can be partially answered by a brief discussion of two of the tactical characteristics of present day field artillery. First, the vulnerability of the field artillery arm, and second, the artillery's requirement for position areas from which to support the advance of the infantry.

First, consider this question of vulnerability. Artillery was not a self-sustaining arm during the past war and properly was not employed as such. It was necessary for the infantry to uncover adequate position areas before the artillery could be landed in the amphibious operation, and further, due to the limited organic local security means in the artillery battalion, artillery depended in no small measure on the infantry to prevent enemy penetrations from overrunning artillery positions. Artillery weapons are large, bulky, unarmored, comparatively slow moving, difficult to emplace, and are particularly vulnerable to enemy artillery, mechanized, and air attacks during movement or during the occupation of position. Once the artillery is able to occupy its position area a well dug-in, well camouflaged installation—it is able to bring close and continuous supporting fires to bear against the enemy. In order for the artillery weapons and the personnel manning those weapons to be effective throughout the duration of the operation, they were not landed, due to their inherent vulnerability, until such time as reasonably safe conditions existed on the beaches. In this respect, an old rule of thumb stated that "Artillery should not be landed until position areas were clear of enemy small arms and mortar fire." Because of the above, then, it was physically impossible for the artillery to participate in or to support the beach assault in past amphibious landings, unless offshore islands within artillery range of the landing beaches were available. In the majority of the Pacific amphibious operations these offshore islands did not exist, and as a result artillery support of the beach assault did not enter into the picture.

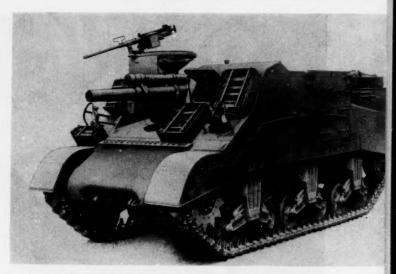
Now, consider the problem of position areas. Artillery battalions require elbow room in mass quantities-normally, 120,000 square yards of terra firma is considered barely adequate for the needs of one artillery battalion. This area is necessary in order to provide for the desired dispersion of weapons, ammunition, personnel, and command post and fire direction center installations. This question of dispersion, which is one means of reducing the artillery's vulnerability, cannot be overemphasized and will be equally important, if not more so, in future operations. These position areas could not be found on the beaches proper—the restricted size of landing beaches and the landing of reserve elements and supplies made it mandatory to keep the beaches relatively free of all unnecessary personnel and equipment. Further, the mere fact that artillery seems to draw enemy fire made it

Vulnerability has made artillery weakest at the most crucial time. The problem of reducing this vulnerability must be solved if the infantry is to have its most powerful support weapon in action when they make an assault on a beach

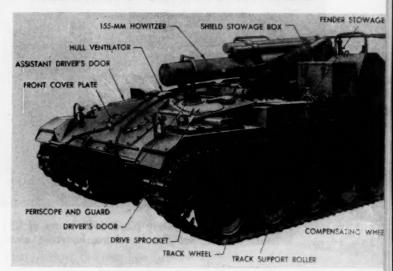
necessary that artillery positions be found inland from the landing beaches. This meant that the artillery could not be landed until the infantry had advanced 500 to 1000 or more yards inland. Here, we had a cumulative fiasco—The artillery could not land until the infantry was able to uncover positions for the artillery to occupy, and the infantry was slow to uncover these desired areas because they lacked the adequate close and continuous fire support needed to provide the punch for uncovering these areas.

IT WOULD SEEM, then, that this problem of providing artillery support for the beach assault would resolve itself into one of reducing artillery's vulnerability and at the same time increasing the speed with which artillery position areas are made tenable for occupancy.

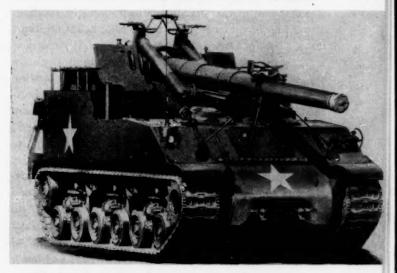
How can the vulnerability of the artillery arm be appreciably reduced? One solution, that is surely not original, would be to provide armored self-propelled weapons, armored observation vehicles, and armored fire direction center installations and switching centrals for all Marine Divisional field artillery battalions. This armor for the artillery weapons need not make them medium or heavy tanks, but it should be sufficient to protect the weapons and personnel manning these weapons from air bursts or VT fuzed projectiles. Furthermore, the armored vehicles just mentioned should be equipped with flotation devices which would preclude the necessity for special landing craft transporting the artillery materiel ashore. This would reduce the vulnerability not only ashore, but afloat as well. All of these means are within the realm of the foreseeable future. Army field artillery now has self-propelled weapons in practically all calibers from the 105mm howitzer to the 240mm howitzer. Place a splinter shield on these present self-propelled mounts to provide overhead cover for the weapon and personnel and our armored self-propelled artillery piece becomes a reality. Tank flotation devices were proven practicable in the past war, and, with improvements, should be even more efficient in the future. LtCol Stuart discussed observation-communication vehicles in his article and suggested that the solution might be found in standard tanks modified to fit the needs of the observers. This would seem to be a logical answer to the problem of protecting our observers in combat. As for the armored fire direction center—a flotable, splinter-proof trailer (with built-in telephone and radio outlets) large enough to accomodate one FDC team, capable of being towed by landing craft into the beach and then picked up at the beach by a prime mover and moved into position, might be the answer to this problem. Thus by providing splinter-proof shelter for artillery weapons and personnel, the vulnerability of the artillery will be reduced to allowable limits and one of the stumbling blocks in the path of artillery's supporting the



Army field artillery has self-propelled weapons in calibers from the 105mm to the 240mm howitzer.



A splinter shield would provide overhead cover for our armored, self-propelled artillery pieces.



Tank flotation device would allow weapons such as this 240mm howitzer to move in with the infantry.



Troops follow artillery piece down ramp of LST at Cape Gloucester. Once the infantryman of the last war crossed the foreshore, he stood alone until effective support could be built up ashore.

beach assault would be removed.

Now, consider the second problem—that of providing the artillery with adequate position areas early in the assault phase of the amphibious operation. In speaking of the future combined arms beach assault, LtCol Stuart said—"The forward movement of the assault would then never stop but would continue inland rapidly to seize key terrain and observation commanding the landing area. Exposure to observed indirect fires would be shortened, at the same time rapidly gaining dispersal room ashore for following landing waves." With the above in mind, let's take a bird's eye view of what the future assault phase of amphibious operations may come to be. First, we would continue to have our pre-Dog-day, pre-H-hour, and post-H-hour saturation of naval gunfire and air destructive and neutralization fires. We would still

have our LVT(A)s preced the assault waves to cover the landing with close support direct fires. Here the similarity ends, at least in part.

In the past, LVT(A)s seldom provided much fire support once the infantry had crossed the foreshore—due primarily to the fact that they were not adequately trained to execute this subsequent supporting role. In order to utilize the potential fire support of LVT(A)s to the maximum, LVT(A) units should be thoroughly trained to function as field artillery, once their primary task of leading assault elements ashore has been completed. In the future amphibious operations, LVT(A) units—previously trained in field artillery tactics and techniques—should, once the assault elements are ashore, immediately proceed to positions ashore and continue to support the assault elements as a field artillery unit. More will be said of this later.

Now, let's see what happens to our assault landing when the "combined arms beach assault" enters the picture. It is here that we project the tanks as the leading element of the landing force. This would provide the

Maj Earl J. Rowse, Naval Academy '41, joined the 3d Battalion 10th Marines, in the summer of 1941 and left it some 40 months and six operations later, by which time it had become the 2d 155mm Howitzer Battalion, FMF.

necessary additional punch to insure that the impetus of the assault landing could be carried without halting deep into the hostile positions. The infantry, in armored personnel carriers, would be able to take full advantage of the neutralization fires of the Naval Gunfire and Air arms, and with the protection and support afforded by the tanks and LVT(A)s could smash forward possibly up to the Force Beachhead Line before being forced to stop to reorganize. Artillery forward observers in their armored observation-communication vehicles would land with the assault infantry companies and could be used to adjust NGF or the fires of the LVT(A)s on targets of opportunity.

Now, how about our subsequent waves? Here, too, are certain changes from our wartime doctrines. Artillery survey, reconnaissance, communication and FDC personnel will land with the reserve infantry companies of the assault infantry battalions and will be followed immediately by the firing batteries of the direct support artillery battalions.

Let us digress for a moment to discuss another innovation of our modern assault landing doctrines. We are landing our artillery reconnaissance, survey, communication and FDC personnel with the reserve companies of the assault infantry battalions. This would be at a time before any mop-up or clean-up of the area overrun by the assault forces could be accomplished. Reserve companies of the assault infantry battalions could not do much in this respect since it would be necessary for them to follow closely the rapid advance inland of the assault companies. Artillery reconnaissance, survey, communication, and FDC personnel would be too busy accomplianing their primary task of readying the position area for occupation by the firing batteries to effect this mop-up and would be seriously hampered and slowed down in their tasks by by-passed enemy elements. To rectify this situation, could not an infantry platoon be detailed from the replacement draft to accompany each artillery battalion's reconnaissance party ashore with the primary mission of mopping up artillery position areas? Once the position area has been occupied by the artillery battalion, the infantry platoon could be sent forward as replacements for assault infantry elements or could be sent to the shore party establishment on the beach. Something could be done to mop-up artillery position areas and perhaps this platoon from the replacement draft is the answer.

LET US RETURN to the combined arms beach assault. From what we have said previously, in a matter of minutes—not hours—we have direct support artillery battalions ashore and ready to furnish close support fires to the infantry and other arms. The artillery could, at this point, either support the advance to the FBHL, or if the infantry has already reached the FBHL, the ar-

tillery could be prepared to cover the reorganization of the infantry and to furnish fires to break up enemy counterattacks if such develop. It may appear from the above that actually, the field artillery role is a rather minor one in furnishing support to the beach assault. However, if the theory presented is followed—i.e., that the LVT(A) supported combined infantry-tank attack, which has been closely following the intense NGF and Air supporting fires to take full advantage of the neutralization that has been obtained, can bull its way deep into the enemy positions—then, there has been little need for the close support field artillery fires up to the time the infantry stops. It will be after the enemy recovers from the initial shock of the preparatory and supporting fires that additional close support artillery fires will be most needed. That will occur when the enemy launches his counterattack. If no counterattack develops, then the supporting artillery fires would be required to protect the reorganization of the assault forces and to support the continuation of the attack after the infantry's reorganization. The sheer power of the combined arms beach assault has, by its inherent drive, uncovered the necessary artillery positions in its initial drive. The question of artillery position areas then has been solved and the second stumbling block in the way of providing early field artillery supporting fires has been cleared away.

The solution to the problems of artillery's vulnerability and its need for position areas does not by itself solve the entire problem of getting the artillery into full participation in the beach assault. There is still the matter or organization that must be considered. Marine Field Artillery has already undergone one major change as a result of lessons learned in the past war-that is, the change from the four-gun battery to the six-gun battery. This change resulted from the recognized need for additional fire power in the organic artillery arm in the Marine Division. It actually provides for an additional 50 per cent increase in fire-power with a negligible increase in manpower. But is increase in fire-power sufficient by itself? Wartime experiences are only important if the lessons learned are used for future improvements and developments in materiel, organization, tactics, and techniques.

- BEFORE PASSING ON to a brief discussion of the required "new" organization for the artillery regiment, let us review LtCol Stuart's ideas on the subject of obtaining early artillery support. LtCol Stuart proposed three alternatives and they are roughly as follows:
- A floating gun platform from which artillery weapons (essentially the same weapon we use today) could provide early support to the beach assault with the same weapon subsequently being landed and employed ashore.
- 2. The development of rockets or mortars as primary amphibious artillery types.



Gen Pedro A. del Valle and late Gen William A. Rupertus watch 105mm howitzer in action on Canal.

3. The development of an amphibious artillery piece resembling the LVT(A), which could fire floating offshore or, at the very least, could be landed with assault waves and provide artillery support by employment of crossfires.

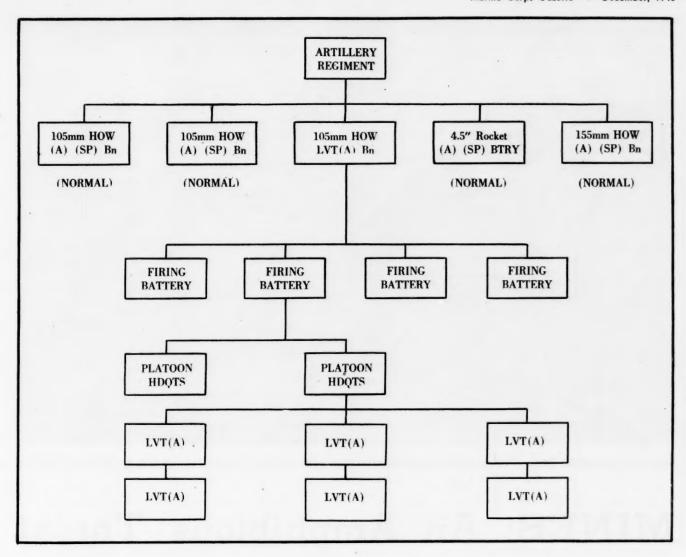
Of the three ideas expressed above, the third would appear to more closely approach the desired solution. However, it is felt that the solution lies not only in new developments in materiel, but also, and equally important, in a new type artillery organization which would be geared to exploit the advantages of the desired improved materiel. LtCol Stuart pointed out that-"while the LVT(A) provided invaluable assistance in the approach of the beach and the infantry debarkation, deployment, and movement of first cover, it never became an effective support weapon during the remaining 59 minutes of the first hour of the beach assault." Now, why was this potentially powerful supporting arm denied the opportunity to exercise its full weight in this critical time? Primarily because most LVT(A) units, when trained at all to function as field artillery, were not adequately

trained to execute the field artillery role.

Let us take a look at the organization chart shown below and see if it might warrant some serious consideration. You will notice that there are two 105mm howitzer (A) SP battalions, and one 155mm howitzer (A) SP battalion. The only changes here from what we now have in the war tables of organization are that the weapons are armored and self-propelled (equipped with flotation devices for the landing phase of the amphibious operation) and that there are only two, rather than three 105mm howitzer battalions. Each of the proposed battalions would have three firing batteries consisting of six howitzers each, which is normal in our present war tables of organization.

THE FIRST MAJOR CHANGE that we propose is the inclusion of a 4.5" rocket battery as an organic unit in the artillery regiment. This battery should also be on an armored, self-propelled mount. The rocket battery would give the Marine Division an additional general support weapon of unquestionable value and in the event of future massed enemy tank counterattacks might be the factor which would turn a possible rout into an overwhelming victory. Further, with the rocket battery as an organic unit for general support area targets, the 155mm howitzers could then devote most of their general support work to counterbattery and deep fires on enemy rear installations.

Now, for the last and perhaps the most important change—the inclusion of the LVT(A) battalion as a part of the artillery regiment. By including this battalion in the artillery regiment, there would be no question as to its ability to execute the field artillery role once its initial mission of covering the assault landing by direct fire has been accomplished. By training primarily as an artillery arm, the LVT(A)s would become as proficient in artillery procedures as the artillery battalions themselves. You will note that the table calls for this battalion to be equipped with 105mm howitzers mounted LVT-(A)s. This is in line with the need for increased firepower and would, at the same time, reduce the ammunition and materiel supply problem for the artillery regiment. One other change in materiel for this LVT(A) unit would be to devise some sort of an easily replaceable tank-type tread to replace the present tractor tread after LVT(A)s were brought ashore. The present tread will not stand up under normal land operations, and would by itself "deadline" the tractors at an early stage of the operation. Our organization calls for four firing batteries in the LVT(A) battalion, each battery consisting of two platoons with one forward observer and six tractors per platoon. This organization would provide each assault infantry battalion with two forward observers to cover their front and with twelve tractors in support. Assuming even 50 per cent tractor casualties during



the assault phase, when the LVT(A)s assumed the artillery role there would still be the normal 18 gun artillery battalion with six spare tractors to take care of attrition.

Using our proposed tables of organization as a guide, let us see what the artillery's organization for combat might be under the new set-up.

One 105mm how (A) SP Bn—Direct Support—One assault Infantry Regiment

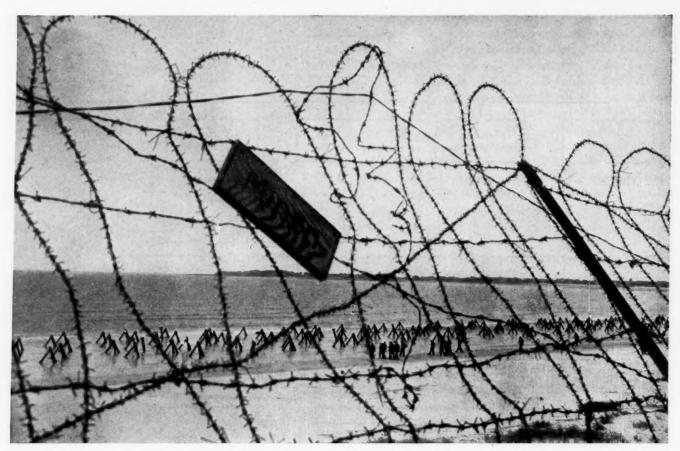
One 105mm how (A) SP Bn—Direct Support—One assault Infantry Regiment

ment

-Initially direct support of both assault infantry regiments. When it assumes the field artillery role, to take over Direct Support of the reserve infantry regiment when it is committed.

One 4.5" (A) SP —General Support—Marine Division
One 155mm how (A) —General Support—Marine Division
SP Bn —General Support—Marine Division

THIS ORGANIZATION FOR COMBAT not only insures an earlier entrance into action of field artillery units but will also provide additional fire support at the most critical stage of an amphibious operation. By reducing the inherent vulnerability of present day field artillery, by lessening the time required to uncover artillery position areas, and by making the organization of the artillery regiment more closely fit the needs of the Marine Division, field artillery can and will provide a means of strengthening the beach assault. To quote from LtCol Stuart's article "We have time, which we didn't during the recent war, to perfect the combined arms amphibious asault. We must utilize that time to eliminate the last remaining weak link in the amphibious attack by strengthening the beach assault." US & MC



Fortified beach at La Baule, France. Mines and obstacles must be overcome if tanks and infantry are to land together.

MINES: An Amphibious Threat

IN THE AUGUST ISSUE OF THE GAZETTE A MOST interesting article entitled Strengthen the Beach Assault appears. LtCol Arthur J. Stuart's thesis is well taken, but I cannot help but feel that he has failed to state the whole heart of the matter.

Col Stuart says, "There are really no insurmountable difficulties preventing the landing of tanks in the first assault waves. The general limitations in connection with the very early landing tanks are: . . . the obstacle effect of beach minefields . . . These difficulties have all been somewhat exaggerated in the past . . ." And later on ". . . The point is that the presence of beach mines can be considered normal as a cheap defensive means in any defended landing area. The problem is known. It can be overcome with sufficient effort. Beach mines must no longer prevent us from landing tanks in their

optimum position in the amphibious assault formation, and they must no longer be permitted to result in the separation of tanks and infantry . . ."

It is in this cavalier treatment of the mine problem that I fear LtCol Stuart's enthusiasm has outstripped his very considerable good sense and sound judgment,

At the present time it would appear that certain passive defensive measures available to deny the attacker a foothold on a defended beach are most formidable. Without going into the Buck Rogers type of thing, it is apparent that the present-day mine problem is one of the greatest headaches faced by future amphibious operations. It is of more immediate concern to us than the A-bomb which is a vastly expensive strategic weapon; mines, on the other hand, are relatively cheap and available to any sized unit, no matter how small.

Now let us examine this mine problem in a little more detail. We'll start from seaward—say about the neighborhood of the 10-fathom line and work in to the beach itself.

By LtCol Donald H. Carter



Marines probe for mines on Iwo. Japanese planted land mines in the loose volcanic ash to stop supporting vehicles.

At the 10-fathom line and outboard of that depth we will find the anti-ship mines, which may be moored or grounded mines, activated either by contact or influence. The influence type mines may be sub-divided as (a) magnetic, (b) acoustic, (c) oyster or pressure type mines. These influence mines may be fitted with one of several firing mechanisms, or a combination of two such devices. There are arming delay clocks and period delay contrivances, both of which are constructed to fire the charge after a certain number of ships (actuations) have passed over the mine. Firing devices such as these add considerably to the problem of clearing mines so equipped.

The magnetic mines, of course, are detonated on being actuated by the magnetism of a steel ship passing within a certain distance of the mine. Degaussing rigs have been quite successful in coping with the magnetic type mine, but again the delay action firing device adds complications.

The Navy has worked out a drill for dealing with the acoustic and magnetic type of mine. But the effort involved is considerable and accidents are not infrequent; the usual accident occurs when a mine detonates unexpectedly—with the result that a minesweeper becomes a casualty.

The oyster or pressure type mine is a nasty bit of work, but, fortunately, it does have its limitations. The activation of the oyster mine will depend on three factors; i.e., (1) the depth of the water in which it is laid; (2) the size (pressure) of the ship or craft passing over the mine; (3) the speed of the ship or craft. Outboard of the 10-fathom line oyster mines can often be subdued by a simple reduction in speed. Naturally any such reduction in speed will also reduce the danger from the acoustic mine, since the sound output (beat or throb of the propeller) is reduced in ratio to the reduction in speed.

Inboard of the 10-fathom line we will encounter antiboat mines which can and do have the characteristics noted above in connection with anti-ship mines. The oyster type mine cannot successfully be laid in less than about 6-fathoms, for at that depth, and less, the ground swell has the same characteristics as that produced by craft passing overhead and so will cause the mine to detonate.

And finally on the fringes of the beach, as well as on the beach itself, we will be coping with the ubiquitous anti-vehicle mine. While, during World War II, no type of anti-vehicle mine was developed for laying below the high water mark, we have no assurance that such is still



Pre-D-Day use of UDTs is one way of destroying mines and beach obstacles ahead of landing troops.

the case. It is entirely probable that such mines have since been developed and it is quite possible that such mines may incorporate the following features: (1) nonmetallic and therefore will not register on the conventional mine-detector; (2) waterproof and therefore capable of being laid below the high-water mark; (3) flailproof and therefore will not detonate on a single instantaneous pressure; (4) blast-proof and therefore will not be set off by close proximity explosion. If, in addition, this type of mine were to be fitted with antihandling devices, as well as with a ratchet delay firing mechanism, the attacker is faced with a rather formidable problem to solve. It is not known whether such a mine exists today or not; but the mechanical requirements are well-known and there is apparently no reason why such headaches could not be produced with comparative ease. Of course, the cost, if it is of any comfort, would undoubtedly be greater for such a mine than it is for a less versatile type.

ANTI-PERSONNEL MINES will, in the future (if they don't already), have similar characteristics to the antivehicle mine. Being smaller and lighter, however, antipersonnel mines cannot successfully be laid in water unless they are staked down to prevent the water-action from moving them about.

Here, then, is the first phase of the problem—mines from the 10-fathom line (or beyond) to the back of the beach and inland. What measures do we have for solving this problem?

First, the minesweepers will come in to clear the water from seaward to about the 4-fathom line. Since the present optimum sweeping speed is about six knots, this factor may well govern the speed of the assault as a whole. The leisurely type of minesweeping, sometimes days in advance, that characterized the Pacific war may not again be possible in future landings against a defended beach. It is quite possible that next time the situation may require the minesweeping to precede immediately the actual assault from the sea. Before complete clearance can be reasonably expected, it may be necessary to sweep our channels several times, due to the complications resulting from mines fitted with delay firing mechanisms.

Having swept in to about the 4-fathom line the minesweepers will now have to begin their turn to seaward again. Therefore, we have a belt of anti-boat and antivehicle mines, extending inboard from the 4-fathom line, which remain totally unswept. What do we do about these horrors? So far as is known the experts are completely baffled by this problem at present, but undoubtedly they are seeking a solution.

ANOTHER FACTOR which enters the picture should be mentioned now. From a depth of nine feet or so inboard to the beach, wheeled and tracked vehicles will be "wading" instead of "swimming"; this means that whatever clearance methods are devised, they must be such as will leave the bottom uncratered.

Possible methods for dealing with mines in the area from the 4-fathom line inboard to the beach—and the beach itself—include the use of explosive mats and rocket-propelled line charges. Both of these methods, to be successful, would be required to produce explosions over the area to be cleared in sufficient intensity to disrupt the firing mechanisms of all mines in the area. Both methods, and the rocket-propelled line charge particularly, show promise, but the task of consistently producing the desired explosion at the desired spot still remains to be solved. Moreover, if a blast-proof mine is a reality, then the entire solution must start again from scratch.

Mines on the beach itself are, of course, little different from the problem presented by minefields in ordinary land warfare. Here again the rocket-propelled line charge, the explosive mat, and the expedient of World War II—the flail tank—may be utilized. But again the reader's attention is invited to the possible complications offered by the "new" type of mine visualized previously.

Aside from the mine problem, there is yet another



A T-3 mine exploder, such as this one on General Sherman tank, can clear pathway in front of each track. Exploder has two sets of five 96-inch disks with 4,600 pounds total weight.

factor which may have considerable bearing on the time at which we can get our tanks ashore on a defended beach. The presence of beach and underwater obstacles represents another problem for the attacker. The most common types of such obstacles used in World War II included Element C, double curved rail, hedgehogs, ramps, stakes, coral cribs, the horned scully, tetrahedra, and the floating hayrick. While obstacles of this type were used with comparative restraint by the Japanese in the Pacific, the Germans used them enthusiastically and in considerable numbers on the Channel coast. In the Normandy invasion, however, these obstacles did not prove as great a problem as had been expected due to the German's inexplicable stupidity in failing to extensively mine such obstacles.

It might be well in passing to note the German mine commonly called the "Katymine" (Kustenmine Mersten. Type A). This efficient little number was designed especially for the destruction of flat-bottomed landing craft, regardless of tide conditions. The Katymine was usually planted outboard of the rows of obstacles, on the bottom, and so that the upper portion remained a few inches below water level at lowest tide; they were equipped with an antenna and a floating detonating line. When there is sufficient water for a boat to pass clearly over the antenna, there is still an excellent chance of it

fouling the floating line. The "Katymine" is mentioned simply as an example of a relatively crude, but considerably efficient, type of World War II mine.

Unless beach and underwater obstacles are used in considerable mass and adequately mined and covered by fire, they are not apt to be particularly successful in proportion to the considerable outlay of labor and material required. However, since such obstacles are practical realities we might just as well begin to study now what measures will be effective in reducing them. Unless we can isolate completely the landing areas, the Pacific-war-style of clearance cannot be utilized.

If, as Col Stuart says, "the presence of beach mines must be considered normal as a cheap defensive means in any defended landing area," then I must disagree with him when he states that "there are really no insurmountable difficulties in landing tanks in the first assault waves." Undoubtedly the mine problem is receiving close attention by those charged with such matters, but at the present time mines of the type discussed herein would seem to be one of the most vexing complications that faces an amphibious attacker seeking to land on a defended beach. The mine problem may not be an insurmountable one, but it would be most interesting to know the solution to some of the problems sketched briefly in this paper.

Russo-Turkish Operations

By D. Fedotoff White

Amphibious Operations in the Mediterranean in 1798-99. The conquest of the Ionian Islands by the allied Russo-Turkish fleet under Vice-Admiral F. F. Ushakov.

THE FRENCH DIRECTORY FAILED TO FORESEE SOME of the important events which were brought about by its decision in 1798 to send Egypt a great expedition under the command of Gen Bonaparte. One of the most significant of these was the conclusion of an alliance between two traditional foes—Russia and Turkey. The first impulse to the understanding between Czar and Sultan was given by one of the numerous rumors about the destination of the huge fleet outfitted at Toulon in the Spring of 1793.

The Russian Minister at Vienna informed his Emperor that the armada was prepared with the view of breaking through the Straits and landing an army on the Russian shores of the Black Sea.

Acting on this report, Emperor Paul offered to defend the Dardanelles by the joint forces of the Russian and Turkish navies.

With an easily understandable coyness, the Sultan hesitated to accept this somewhat surprising offer. The Turks still believed that the expedition was not intended for an invasion of their possessions. But when the large French fleet was sighted off Crete, the Ottoman government concluded that there was something to the Russian warning, and asked for the help of the Czar's fleet.

A Russian squadron consisting of five ships-of-theline, six frigates and three light vessels entered the Bosporus and anchored off Buyukdéré on September 5th, 1798. It was commanded by that tough old officer, Vice Adm F. F. Ushakov, well-known to the Turks, whose naval forces he had beaten twice during the Russo-Turkish war of 1787-91.

An interallied conference was then convened to draw up the plan of operations.

The news of the great naval victory at Aboukir had already reached Constantinople. With the threat to the Turkish capital removed, the allied fleet was free to undertake offensive operations. A plan of campaign prepared by Ushakov was adopted. It was decided to employ the squadron for the conquest of the Ionian Islands off the West coast of Greece.

The French had acquired these island possessions

from the Republic of Venice, under the terms of the treaty of Campo Formio in 1797, when Austria and France had made a settlement at the expense of the innocent bystander-Venice.

It was obviously very much in the interest of Turkey to free herself of this threat to her flank. From the Russian viewpoint, the acquisition of a well-fortified naval station at the entrance to the Adriatic was also very desirable.

According to the agreement concluded between the allies, the Turkish government was to supply food for the Russian squadron at its own expense, while naval stores and repair material were to be furnished by the Turks at current prices, and paid for by the Russians. This agreement nearly resulted in wrecking the seige of Corfu, for the Ottoman supply service was utterly inefficient.

THE ALLIED SQUADRONS had little in common. The Turkish ships were well-built of seasoned timber by French naval architects. Their artillery consisted of well-cast bronze guns and their bottoms were coppersheathed. Some of the senior admirals of the Turkish navy were intelligent and energetic men. A number of junior officers had been trained in a naval school under French instructors. The weakest aspects of the Turkish naval organization were the low educational level of captains and senior commissioned officers of the ships and the condition of its lower-deck personnel. Only a small trained cadre was retained in peacetime. Upon mobilization this nucleus was dissolved in a motley crowd of untrained recruits, hastily pressed into service.

The Russian naval personnel was vastly superior to the Turkish in point of discipline and training; but the same could not be said of their ships. Most of these were built of green timber with thin nails, were leaky, and in a constant need of repairs. They were not coppersheathed.

Ushakov was appointed by the Sultan to the post of the CinC of the allied fleet, and the Turkish admiral, Kadir-Bey, thus became his subordinate. The latter was an even tempered and cooperative flag-officer, with whom Ushakov succeeded in establishing a close friendly relationship.

The Turkish force consisted of four ships-of-the-line, six frigates and four corvettes with some 6,000 men as

"... The Corfiote auxiliaries scattered at sight of the approaching column, but the 530 Russians, Turks, and Albanians offered a determined resistance. The fighting lasted until dusk, and there was some hand to hand fighting..."

against about 7,400 (including 1,700 marines) in Ushakov's squadron.

The native population of the Ionian Islands, predominantly Greek, hated the Muslim Turks and was terrified at the thought of the depredations usually committed by the Ottoman troops. The French had failed to make friends with the people of the islands but their rule, however harsh, was preferable to the latter to the prospect of falling under the sway of the Ottoman Porte. As the inhabitants of the islands were accustomed to bear arms, their adherence to the French would have placed in jeopardy the success of the campaign.

To meet this situation, the Greek Patriarch of Constantinople launched a proclamation to the Ionians, promising them self-government on the pattern of the Republic of Ragusa, or along any lines they would themselves prefer.

Ushakov also published an appeal, which was signed by both admirals, offering to the islanders freedom and security of private property, as well as the right to organize their own government in accordance with their "faith, old customs and local conditions."

This propaganda had the desired effect: the local population actively sided with the allied fleet. To understand the reasons for the success of these proclamations one has to remember that Russia had then important connections among the Greeks, ever since the Chésmé campaign in the Mediterranean in 1770. Also, with the development of southern Russia by Potemkin, that territory became to the Greeks something what America was to Europe in the nineteenth century.

Ushakov valued the co-operation of the Ionians very highly, and cultivated their sympathies methodically during the entire campaign. But his very popularity with the Greek Orthodox islanders created a serious problem, as the Turks were offended by the difference in the attitude of the people towards the Russians and themselves. Ushakov met this difficulty by bending every effort to retain the friendship of his Turkish colleague, Adm Kadyr-Bey. He appointed as his principal liaison officer with the Turkish admiral Lt George Metaxa, a native of Crete. Metaxa was an intelligent and tactful officer, who spoke the Turkish language fluently. He was eminently successful in his task, and won the confidence of Kadyr-Bey.

The allied fleet passed the Dardanelles on October 1st. It was met at sea by a small Cerigote ship with a deputation from the Greek population of the island. Ushakov received the delegates himself, and assured them of his goodwill and protection.

Two Russian frigates were dispatched ahead to Cerigo (population then around 7,000). By a few gunshots they easily drove out the tiny French garrison out of the battery on the shore of St Nicholas bay. The French withdrew into the larger fort, known as Capsala, situated on a steep cliff.

The frigates proceeded then to land a small detachment of marines and seamen who began to build a breach-battery. The next day Ushakov arrived with the fleet. A Turkish force under the RearAdm Fetih-Bey was sent ashore, and a second battery was constructed. The batteries were completed on the next day upon the fleet's arrival; i.e., October 11th. Ushakov summoned the French commandant to surrender on terms but the latter refused. Only after the batteries had opened fire and the garrison saw the preparations for the storm and experienced some losses did the commandant capitulate.

Capsala surrendered on very favorable terms which were a part of Ushakov's policy as he was anxious to dispel the idea that an alliance of Turks and Russians meant untold hardships to enemy prisoners. The French had lost nine men killed. The prisoners totaled 106



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officers and men.

Two other islands—Zante (population then about 40,000) and Cephalonia (peopled by about 60,000) were taken with the same ease as Cerigo. Two frigates were again sent ahead. The Zantiotes despatched a boatload of notables to greet the Russian admiral and to promise him their full support. The frigates were warned of the new batteries built by the French close to the landing stage, and had no difficulty in silencing them.

It was getting dark when the first boats with armed men were sent ashore, but the Zantiotes brought out lanterns and started bonfires to show were the best landing places were. They also waded into the sea and carried the Russian officers and men on their backs through the shallows. The fleet had arrived in the meanwhile, and additional marines and seamen were landed while the ships were still under sail.

THE MAIN FORT was summoned but refused to capitulate. Then Ushakov gave the order to storm it. The allied troops were joined by a large host of armed Zantiotes. Storm columns were formed and had advanced to the foot of the crag on which the fort was situated, when the French decided to surrender.

The prisoners totaled 491 officers and men.

By this time; information had reached Ushakov that the inhabitants of Santa Maura and Cephalonia had also risen against the French, and were likewise asking for assistance. Capt Poskochin with a ship-of-the-line, three frigates and an aviso was detached to Cephalonia on October 25.

The admiral sent Capt D. N. Seniavin with two shipsof-the-line and two frigates to Santa Maura on October 29, and a larger squadron under the command of Capt Selivachev was directed to blockade Corfu.

At Cephalonia several former Russian officers, natives of the island, had organized a rising of the population which took the French garrison unawares, so that it failed to offer any armed resistance. Even the 25 gun fort, Asso, on a tall crag, was abandoned by the French without defense. The Cephalonians captured 11 officers and 197 men.

At Santa Maura, (population 15,000), Seniavin encountered a stiff resistance. On November 1st his squadron landed a force of 393 Russians and Turks with six guns. These were joined by an armed detachment of the St Mauriotes.

The French garrison of some 550 officers and men held a strong fort on a lofty eminence, protected by the sea on two sides, and on the others by a deep and wide moat filled with water.

One of the Turkish frigates was sent by Seniavin to anchor in the narrow channel separating Santa Maura from the mainland, to prevent the French from escaping by sea. On November 2 the allied forces ashore were augmented by 104 seamen and gunners. Three eight-gun batteries were built under difficult circumstances, as the naval guns had to be dragged up steep goat paths and the work had to be done right in the open within enemy gunfire. Nevertheless, the batteries were ready on November 3d. The Turks also landed some additional 180 marines with 15 Russian gunners, and built another fourgun battery on the mainland, within close range from the fort.

FOR TWO DAYS the besieged replied to the bombardment with a well-sustained fire. The French refused the terms offered to them. Seniavin was under definite instructions from Ushakov in this respect and could not grant the milder terms asked. The garrison made a gallant but futile cortie with some three hundred men, which was beaten back by the defenders of the breach-batteries.

Ushakov arrived on November 11th and landed 552 Russians and 222 Turks. He wrote the French commandant that should matters come to a storm, no quarter would be given, but offered better terms than those promised by Seniavin. On November 16th the fort surrendered.

The French loss in killed was 34, in wounded 43. Those who marched out to surrender numbered 512. The allied losses were: Russians—two killed, six wounded; Turks—four killed.

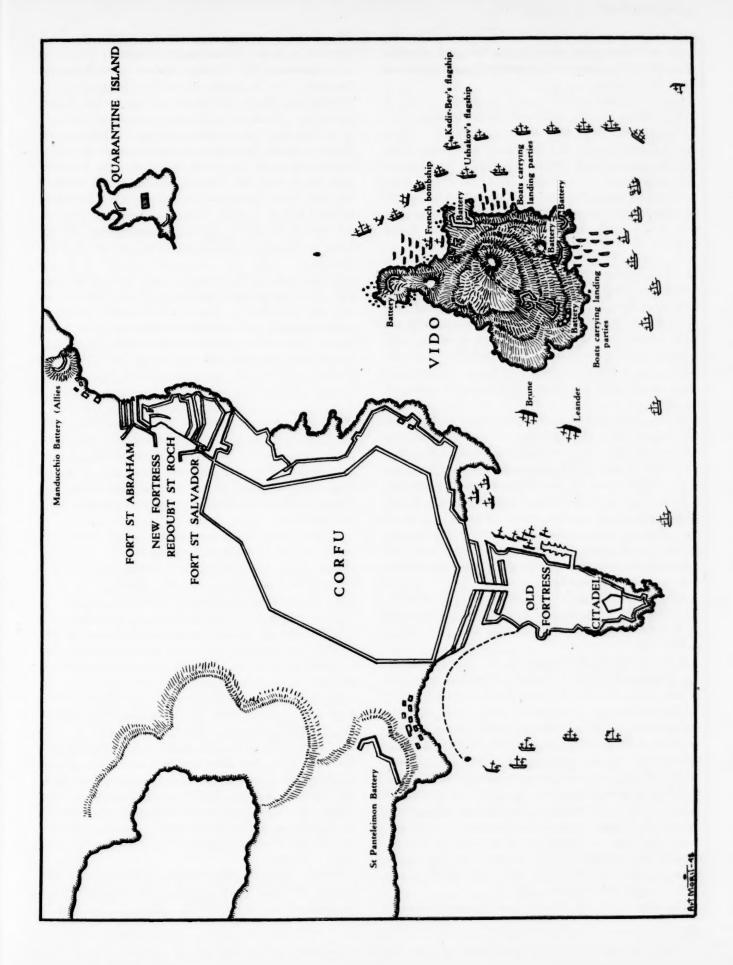
The total of French prisoners taken on all four islands was 1300 with 202 guns. The Russian losses were two killed and six wounded.

Thus the French paid dearly for their failure to concentrate their forces on the strongest point in the islands—the fortress of Corfu.

The system of fortifications on that island had an enviable reputation for impregnability. During the famous siege of 1716, the Turks lost some 15,000 men without succeeding in bringing about its capitulation. Since then Corfu's defenses had been modernized by the Venetians.

The citadel was situated on a tall steep cliff on cape Desiderio, and was separated from the town by a deep channel. On the other side of the town, to the west, was located the New Fortress. This was excavated from the rock, and possessed long underground and covered loopholed galleries. There were also strong fortifications on heights near the New Fortress, known as Mount Abraham and San Salvador. Fort Abraham had two bastions and a covered gallery with a triple flat of underground passages. San Salvador consisted of two bastions, also connected by a curtain wall. Between the two forts there was a redoubt on the lower ground, known as St Roch.

The town of Corfu was surrounded by a double rampart with a dry moat. The two fortresses were connected by a loopholed wall, which skirted the harbor. From the sea the defense was strengthened by the five



batteries built on the island of Vido, where a floating boom and abatis were added to interfere with attempts of landing on its beaches. The smaller Quarantine island was also fortified.

Corfu was then estimated to need a garrison of at least 5,000 to be able to defend itself effectively. According to the French data, it only consisted in 1798 of the 79th demibrigade of 1,450 officers and men, of the 5th company of the 2d Sapper battalion of 90, of about 210 artillerymen and 50 gendarmes—altogether some 1,800 troops under the General of Division Chabot. In addition to this, two detachments numbering some 100 men were formed of French administrative officers and civilians.

THE RUSSIAN SOURCES usually give the number of defenders as 3,000. This figure seems to include noncombatant French employees. The prisoners' roll prepared by the Russians after Corfu's capitulation shows 2,030 infantry, 387 artillery, and 379 naval ratings, with a total for all male French prisoners 2,931. One can safely assume that the French land forces did not very much exceed 2,500 officers and men at the beginning of the siege.

On the Corfu roadstead were anchored the Le Généreux (a 74 gun ship), the ex-British 50 gun Leander, the corvette La Brune, the bomb-ship La Frimaire, the aviso L'Expédition and 6 small galleys, as well as a few light ships. Of these only the Le Généreux was fully manned.

Upon the news of the conquest of Santa Maura by the allies, there was an uprising of the Corfiotes, who seized the village of Manducchio and occupied the heights facing Fort Abraham. The French had to fight a pitched battle with the insurgents to clear them out of the village, and to disarm the inhabitants.

As soon as Selivachev's squadron hove in sight on November 4th, a delegation of disaffected Corfiotes came on board his ship and offered to raise an armed militia to help him.

A blockade of both entrances to the Corfu roadstead was immediately established and the French were invited to surrender, to which they replied with a firm "No."

Ushakov arrived on November 20th. After studying the situation, he decided that he needed at least 12,000 auxiliary Turkish troops to take the fortress otherwise than by starving the garrison out by a long blockade. He immediately requested several pashas on the Turkish mainland to send their troops to Corfu. In this move Ushakov had the full support of the Turkish government, but, largely because of the intrigues of the powerful and crafty Ali-Pasha of Yanina, this assistance was slow in coming. In the meantime, the crews of the fleet began to experience a real famine, because of the failure of the Turks to send the necessary supplies.

The allies drove the French from Quarantine island

and placed a seven-gun battery there. The fleet was disposed in an arc off the island of Vido.

On January 10th Ushakov received reinforcements: two newly built 74 gun ships came from Sevastopol (one ship and one frigate left behind for repairs had joined earlier, as well as two of the frigates sent to Rhodes). So by that date Ushakov had with him 12 ships and 11 frigates. The blockade was not very successful. A French armed brigantine—La Rivoli—broke through it in the night of January 6th, because of Selivachev's blunder. The latter fired upon his own light ships, which had nearly succeeded in capturing the brigantine. L'Expédition got away to Ancona to ask for help and, finally, the Le Généreux escaped with the La Rivoli and the pink Le Fortune.

Metaxa says in his memoirs that the Turkish rear admiral was responsible for letting the *Le Généreux* to slip out. According to him, the Turk refused to weigh anchor at night, saying that his men were weak from hunger and on the verge of mutiny, because of the privations they had suffered in the campaign. It is, however, apparent that the Russians had little experience in blockade service, and were learning the hard way.

THE FIRST ALLIED BATTERY in Corfu was built at the request of the villagers of Manducchio and vicinity to protect them against raids made by the French. It was completed by November 26th and placed on a height in front of Manducchio, so that it could both protect the village and fire upon the northern group of Corfu's fortifications.

Another small battery was also established at the suggestion of the Corfiotes to keep the French out of the villages of the southern part of the island. It was constructed on an eminence near the church of St Panteleimon. The Corfiotes promised to defend it themselves. Some twenty gunners and marines were sent there by Ushakov, and the battery opened fire on December 1st.

The French soon made a sortie with 600 troops. The Corfiotes promptly took to their heels, and the Russian detachment was captured, excepting four men.

On the same day in the afternoon the French sallied forth with 1,000 infantry and 40 cavalry, and attacked the Manducchio battery. The Corfiote auxiliaries scattered at the sight of the approaching column, but the 530 Russians, Turks, and Albanians, who were there, offered a determined resistance. The fighting lasted until dusk, and there were some hand to hand encounters. The French left 100 corpses on the battlefield and returned to the fortress, without succeeding in capturing the battery. On the allied side, the Russians alone lost 31 killed and 72 wounded.

Ushakov considered the island of Vido the key to the defense of Corfu. At the same time, he was loath to use his marines and seamen in the attack upon its heavily fortified positions, held by some 450 French. He wanted to employ for this purpose auxiliary Albanian troops with a stiffening of Russian and Turkish regulars. His squadron's personnel formed the bulk of the experienced trained officers and men of the Black Sea Fleet, and he foresaw a long and arduous campaign after the reduction of Corfu. The lives of his men were very valuable to him.

Ultimately, Ushakov succeeded in getting together 4,250 Albanian troops. He erected a replica of the fortifications and obstacles of Vido ashore on Corfu and exercised under his own eye the force assigned to the attack. The necessary materiel such as ladders, planks for flying bridges across moats and trenches, axes, spades, tackle and rope were distributed between the ships' boats appointed to carry the men to the island. A special code of signals was prepared to make possible for Ushakov to direct the operation from his flagship.

PRIOR TO UNDERTAKING THE ATTACK, Ushakov had built a strong battery in the place of the one captured by the French on December 1st. He armed it with 13 heavy naval guns, 7 mortars, and 7 field guns. Several French sorties directed against it were repulsed. The fire of this battery caused considerable destruction in the Old Fortress.

Ushakov prepared detailed battle orders and instructions for the landing force. The attacking marines and seamen were divided into three groups. Each detachment was to land on Vido upon a signal from the flagship, one after the other, so that the boats carrying the landing parties would not get into each other's way at the beaches, exposing their loads of troops unnecessarily to the enemy fire. The ships were so distributed that the garrison of the Old Fortress was to be kept busy replying to the fire of a small squadron, while one ship and one frigate were to hold under observation the narrow arm of the sea dividing Vido from the mainland, to prevent further reinforcements from reaching the island, and, at the same time, to engage the Leander and the La Brune anchored there.

A detachment of one Turkish and two Russian frigates, with an armed schooner and an aviso with a small Turkish gunboat, was directed to engage the five batteries of Vido at close quarters, and to attack the bombship and the galley anchored in a bay between two batteries.

The main body of the fleet was to follow promptly. The Russian squadron was to anchor with springs in an arc close to Vido, while the Turkish ships were instructed to form a concave order outside the Russian line of battle.*

It was arranged for the troops assigned to the attack force to embark in ships' boats near the bay of Govino on Corfu. Officers in charge of these boats were ordered to station them in the fire lee of the fleet, under the protection of the hulls of the ships, to await there the signal to advance to the beaches. The guns and the materiel assigned to the landing party were loaded beforehand.

During the night preceding the operation, a storm had damaged a number of the booms protecting Vido's beaches. This advantage was offset by reinforcement sent from Corfu to bring up the island's defenders to some eight hundred officers and men (according to French sources about 650).

THE OPERATION BEGAN at 8 a.m. on March 1st, somewhat inauspiciously, as the Albanian irregulars refused to embark in the ships' boats, under the pretext that they were not accustomed to fight on water, so that the infuriated Ushakov had to rely only on his own and Turkish regulars.

This defection did not cause any delay. The Russian flagship was anchored within grapeshot range off one of Vido's batteries, and soon destroyed it. By 11 a.m. practically all of the island's artillery was silenced, and the signal was made for the landing force to attack. This maneuver was accomplished with little loss, as only one launch, carrying five small guns, was sunk by enemy fire. Altogether, 2169 officers and men were landed.

The bulk of the French troops, driven from their guns, concentrated in a small entrenchment in the center of the island, while some of them tried to get away to Corfu in small boats. Their resistance was soon overcome by the allies, and the French surrendered, taking refuge from the enraged Turks in a hollow square, formed by Russian marines.

The French lost in this action some 150 killed and drowned, and 423 prisoners. The Russians had 21 killed and 55 wounded, while the Turkish casualties approximated those of their allies.

The action ended about 2 p.m. On board ships, there were 9 killed and 28 wounded Russians, and 8 killed and 7 wounded Turks.

The attack on the northern group of Corfu's fortifications began on the same day. About 5 p.m. after a heavy bombardment from the allied batteries, the Albanians and the Turks, assisted by the Russians, captured the forts San Salvador and St. Abraham, with a loss of 22 Russians killed and 72 wounded, while the Albanians and the Turks had 61 killed and 92 wounded.

Late in the evening of the same day, Gen Chabot asked for terms, and on March 3rd the capitulation of Corfu was signed. Ushakov was free to begin the blockade of the French naval base in the Adriatic, Ancona, and to harass the French and their local allies in the Kingdom of Naples.

^{*} This arrangement was based on the consideration that the Turkish ships were slow in anchoring and wearing with springs, and Ushakov did not want to expose them for a long period to the raking fire of Vido's batteries.

A "N ew Look" for Individual Equipment

By 1stLt Clarence E. Schwaneke Original drawings by the author

RECENTLY MARINE AIR GROUP 33 EMBARKED ON training maneuvers in the field. The problem consisted mainly, of loading the Group and its squadrons aboard LSTs at Seal Beach, California, proceeding to Camp Pendleton, California, unloading on the beach, moving up to the airstrip, designated as "Pendleton Island Airstrip," and operating under simulated combat conditions for approximately one month. Most of the personnel were to accompany the operating gear and supplies on the LSTs, while the aircraft would be flown to the airstrip as soon as the assault forces had secured it and the surface echelon had set up operating areas to receive them. Besides the training and experience that all hands would receive, the maneuver, on second consideration, would be a testing ground for existing equipment and would also facilitate the adjustment of present squadron tables of basic allowances. During preparation for the maneuver, I was selected as one of the platoon leaders of the surface echelon of my squadron, Marine Fighting Squadron 223, and would embark on the LST. The experience later proved to be quite valuable to me, as this was to be my first experience using the equipment with which Marine ground troops are very familiar. It is almost an accepted rule that aviators are notorious for their faculty of arriving on the scene with more or less "prepared" quarters awaiting them, and I have been no exception to this rule. Thus, I suddenly found myself, for the first time, constructing a pack, wearing a helmet and utility clothing to work, setting up a shelterhalf, eating cold field rations, shaving with a dry razor, and doing all the other uncomfortable things the ground troops have come to accept as part of their normal daily routine.

I started to prepare my personal equipment with all the trust of a recruit, believing that this equipment was the last word in efficient fighting gear. I drew a huge armload of gear from the squadron materiel department, took out my field manuals, and started putting it all together. I hit my first snag when I started to put the pack M1941 together. After several conferences with everyone who passed the ready room, I finally got the pack to look like the pictures. But not until I had crammed rations, socks, shorts, towel, meat can and cover, and several other articles into the knapsack and haversack with the aid of a large shoe horn, and then had smoothed out its lumps by dribbling it across the concrete floor several times. That maze of straps had me stumped for awhile, until the sage advice of a twenty-year man got them placed approximately as the field manual pictured them.

The very slight amount of trouble I had rolling my bed roll gave me no indication of the trouble I was to be visited with later on the beachhead. On the good, dry, spacious concrete floor I was, I admit, able to roll and strap it to the pack with the help of but one other person. Next, I donned my new string-belted, bellows-pocketed dungarees, adjusted my new helmet, which was well designed, and found I was ready for the coming invasion. At this time I was willing to admit that my ignorance may have been the factor that caused all the confusion, and that my equipment was still the last word.

February, the troops were mustered, and the platoon and I embarked for Pendleton. After about fifteen minutes of wearing my gear, I felt as though my shoulders were being cut through by the pack straps. I looked around at my troops, and found that they, too, were very uncomfortable. It seemed impossible that all packs could be out of adjustment. Certainly I saw every kind of adjustment possible, but generally I found that the packs insisted on hanging too low on the men's backs. Still I thought that being unused to this sort of thing, this uncomfortable period would pass and we would, yet, hail the equipment as the foot soldier's friend.

Later, after the landing had been made and we had spent our first night on the beach, I was then thoroughly convinced that the individual equipment was not satisfactory for the purposes for which it had been designed. It occurred to me that this equipment had become static in design, and because it had been accepted as regulation. marines had come to accept its shortcomings with the attitude that there was nothing to be done about it and they were meant to be uncomfortable. Aviators have long regarded the frequent changes in their personal flight equipment as thoughtfulness on the part of aviation equipment designers to make the gear more comfortable. and thus allow the pilot to do a little better job. These designers have found that when pilots find an article uncomfortable, they will neglect wearing the gear, and its original purpose will have been defeated. This, of course, can't be true in the case of ground troops, as they

Part I: A Marine aviator hits the beach and finds that the pack and some other items of infantry gear can be uncomfortable. Instead of quietly retiring to his air haven he makes some excellent suggestions for improvements in infantry gear.

are required to wear the equipment, regardless of its merits.

Even so, why should the infantry marine be dogged by a myriad of small discomforts just because his equipment has not been kept modern by research? This question occurred to me while bivouaced on the beachhead at Pendleton, and I decided to gather all the pertinent information, both pro and con, and keep notes concerning the individual equipment and its use from both personal experience and observation of the men in the company. I feel that we gave the equipment a very thorough test and the shortcomings we noted have been experienced by many others before us.

After the maneuver was completed, and upon evaluation of the notes I had taken, it was clearly indicated that three items were the worst offenders in respect to comfort, and that they needed some sort of revision. These items are: (1) The Pack M1941, (2) The Sleeping Shelter and Bed Roll and (3) The Utility Clothing.

In an attempt to get the most value from the foregoing notes, I decided that the best presentation of this information would be to show the pros and cons of the present equipment and then make suggestions for improvement. Having analyzed their faults I have redesigned these items, and I believe these designs, although far from perfect, to be a basis for further comment, discussion, change, and simplification which may lead to the perfected article and its eventual acceptance as regulation by the Marine Corps. To present accurately the ideas it was necessary to make a series of constructional drawings of each item, without which the greater portion of the desirable features of the equipment would be lost. The descriptions of the equipment, of necessity, will be meager and will refer to the drawings wherever convenient.

FIRST, let us consider the Pack, M1941.

The pack was found to be hard to assemble. Pieces of personal gear, toilet articles, socks, shoes, etc., vary in size and have to be forced into place in either of the sacks. Most members of the squadron found that the gear they intended to put into each sack had to be assembled for packing, wrapped in the towel or some other cloth article, and pushed into the sacks to preserve the shape of the pack. This meant complete unpacking to get to any one of the small objects in the pack.

The harness, shoulder straps, and suspenders are hard to rig and adjust. Examination of the packs before embarkation revealed variations in rigging through false interpretation of instructions which are necessarily elaborate. It was also found that variances of amount and size of articles placed in the packs allowed the harness to adjust itself differently. On many of the packs, the crossed suspenders straps on the back refused to pass over the top of the haversack if even slightly disturbed. Much time was spent shifting and adjusting these straps during the short marches that we made, and it is reasonable to believe that the conditions would be aggravated on any long marches, such as those made by the ground forces.

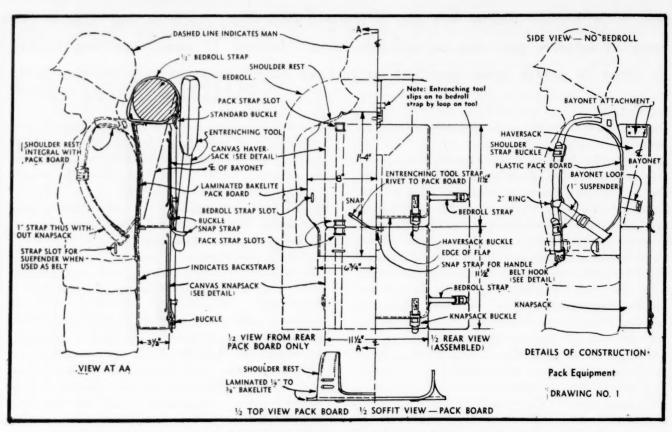
Upon removal of any small articles from the inside of either haversack or knapsack, or to remove the entrenching tool entirely from the pack, it is necessary to unhook the harness which crosses over the back of the pack. Then the contents of the entire sack have to be removed and, in some cases, the bed roll has to be taken loose to get the unused gear back into place.

Although each strap on the pack is adjustable, it is difficult to successfully adjust all the buckles to make the pack fit all the wearers. The instructions in the field manual cover the subject at great length, but even this left much to the individual wearer's interpretation, and



After having worked variously as an aircraft parts designer, airline pilot, and Army Air Transport Command pilot, 1stLt Clarence E. Schwaneke was commissioned in the USMCR, and assigned to active duty on 1 August 1943. Upon completing flight training at Pensacola he became a staff pilot for the Naval Air

Training Bases in 1944. He served overseas as a transport pilot in the Central Pacific Area and later in China. Returning to the United States in early 1947, Lt Schwaneke was assigned duty with MAG-33. At MCAS, El Toro, he changed from transport aircraft to fighter planes with VMF-223. While assigned to VMF-223 he participated in the maneuver described in A "New Look" for Individual Equipment.



Inclusion of plastic pack board should eliminate abrasions and chafing on the back of wearer.

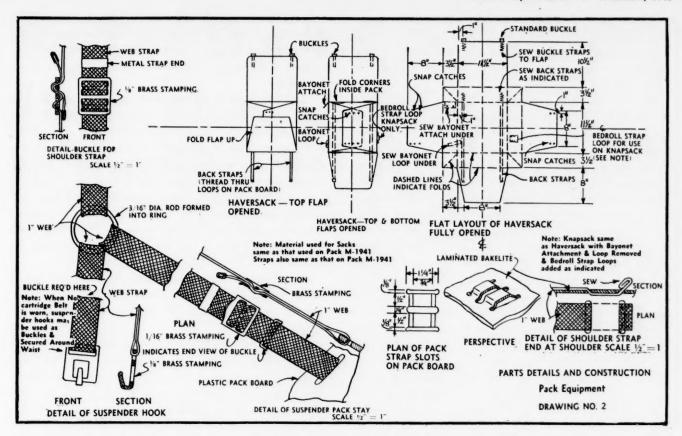
many awkward fittings resulted. As mentioned earlier, the most common discrepancy was that the pack tended to ride too low on the back, causing discomfort to the wearer's shoulder and neck muscles and making it necessary for him to walk bent forward.

While engaged in the field maneuver, we found that we had to make up our packs early one morning in the dark. A large number of men in the company found that the job required something more than "feel," and were obliged to remake their packs later in the day when the opportunity presented itself and the light had become sufficient. It can be easily seen that, in actual combat, making up a pack at night with blackout restrictions would require a stop for adjustment of the packs later in the march, during daylight, which might be impractical, if not impossible.

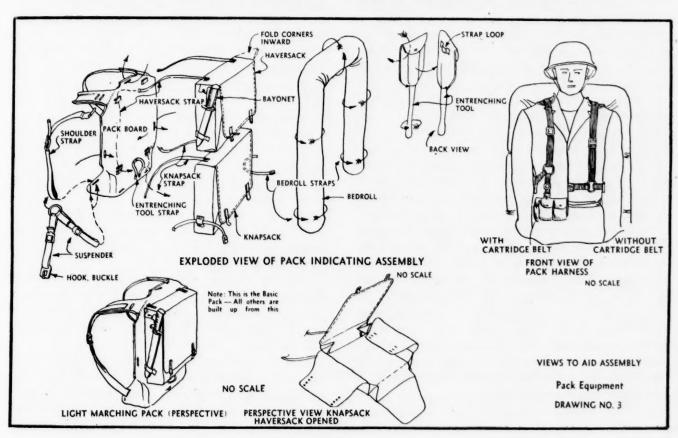
When I first put my pack in shape, I tried to use all the foresight I could muster, to introduce articles into the pack in reverse order to that in which I thought I would need them. I had my cans of rations arranged for use in their proper order; that is, breakfast, dinner, and supper. It was a good idea, but it didn't work out as it should have. Through changes in the time schedule and to avoid unpacking the whole works, I had breakfast at dinner time, dinner for supper, and supper for breakfast. Even with this concession, I found that I had made and remade the pack five or six times a day, just to find some small item lodged in the bottom of one of the sacks.

Upon our arrival at the loading area, before embarkation, the squadron was broken into working parties to assist in the loading of the ships. To accomplish the task, it was necessary for everyone to remove their packs and lay them on the ground. Many of the packs were soaked through with water from the wet beach, as no provision is incorporated in their design to keep them off the ground. Consequently, many of the men had wet gear at the very start of the field problem. Again, upon arrival at the Pendleton beachhead, the same procedure was repeated, and the packs were further soaked in water.

The lieutenant carefully arranged his rations so that he might have breakfast, dinner and supper in order. It never worked out that way. No matter how he arranged the tin cans, he would be eating supper at breakfast or dinner at supper unless he wanted to break his pack down completely.



The haversack and knapsack are designed to be full opening, allowing any article to be removed without removal of the pack's entire contents. Knapsack and haversack are adjustable in depth.



It was found desirable to use the haversack or knapsack separately, on some occasions, as a bag for carrying toilet articles, gathering rations, etc., and again it was necessary to disassemble the entire pack, in most cases, to do this.

By far the most undesirable feature of the pack was its ill fit. We all had sore shoulder and neck muscles for several days after wearing it. The straps and canvas caused bruises to the muscles and chafing and abrasions to the skin. Though none of the men became casualties from this, their working efficiency, not to mention morale, suffered; and with little imagination, one could visualize a great number of real casualties for this reason if a long march was required. Of course, we weren't used to daily wearing of the equipment but I feel certain that a better design would lessen the abrasion, soreness, and general discomfort that accompanies wearing of the pack.

- To REPLACE the Pack M1941, I suggest a pack consisting of four main parts: (1) The Pack Board, (2) The Haversack, (3) The Knapsack and (4) The Harness Assembly. Other small features are included in the new design, and will be discussed in detail later. The pack board is pressed or otherwise formed of one quarter-inch thick laminated Bakelite and is designed to stack easily, one inside the other. This plastic material should be impregnated into layers of cloth to provide as much strength as possible. The haversack and knapsack are made of the same type and weight materials as those presently used in the pack M1941, and are made as closely as possible from the same cross-shaped pattern. If a pack similar to this were ever constructed for test purposes, it is felt that new materials of lighter weight might be tested to ascertain whether canvas of the weight now used is really necessary. The harness assembly is fabricated webbing such as that used on the present pack. Again, it is felt that newer, light material should be tested as to suitability. This assembly also includes new buckles and hooks stamped from brass stock which will better serve the purposes for which they are intended. Several bedding roll straps are indicated, and these are the same as those presently used. Drawing number 1 shows general construction features of the new pack, with portions cut away to show the board. The second drawing indicates various details of the harness buckles and attachments. A flat diagram of the haversack-knapsack is also shown on this drawing. An exploded view of the pack is shown on drawing number 3, indicating its assembly. Drawing number 3 also presents front views of two harness arrangements. The proposed pack has what I believe to be many advantages not found in the present equipment. To make these features more obvious, I have enumerated the following:
- (1) The inclusion of the plastic pack board seems to be a good solution to the uncomfortable feeling of the

- sack-type pack against the back. It is felt that a properly form-fitting board will eliminate abrasions and chafing on the back of the wearer. This is of prime consideration in cold climates where abrasions to the skin can cause casualties.
- (2) The pack board, as shown on the drawings, has two wide shoulder rests incorporated in its design to ease and distribute the load on the shoulders of the wearer and also to position the pack comfortably high on the shoulders, thus tending to eliminate the heavy pull on the neck muscles.
- (3) Again, the pack board provides a rigid basis for making up the pack. This would help greatly in making the packs of a group appear uniform. More important than this, it would lessen the amount of wrestling required to put a pack together.
- (4) When the pack is not being worn, the pack board would keep the cloth parts of the pack off the ground. This is especially desirable on wet or snow covered terrain.
- (5) The haversack and knapsack are designed to be full opening, allowing any article to be removed from or placed into the pack without the removal of the pack's entire contents. The haversack and knapsack are also adjustable in depth. This will make the pack's appearance better as articles are removed or replaced.
- (6) The bed roll is attached primarily to the pack board. This further facilitates the use of the haversack and knapsack, in that either may be removed completely from the pack and used separately without tearing down the entire assembly.
- (7) It is the designer's opinion that the changes in the harness are more comfortable and serviceable. The harness, suspenders and straps used on the present pack have to be adjusted with each opening of the pack. The proposed method eliminates this all together.
- (8) The cartridge belt hooks are designed to be used as a belt buckle. The suspender, for this reason, becomes a useful part of all the different arrangements of pack, and can be used whether cartridge belt, web belt, or no belt is worn.
- (9) The new harness is much easier to adjust and to attach to the pack. Once adjusted to the individual, no further adjustment is necessary unless clothing is taken off or put on.
- (10) The addition of a strap loop on the entrenching tool cover allows it to be swung aside when the pack is opened. The tool is as accessible as ever, and its cover may be removed from the pack by unbuckling the top bed roll strap.
- (11) It is believed, the similarity between the haversack and knapsack would substantially reduce the cost of manufacturing these items. Examination of the drawings will show that the construction of these two items has been simplified.

So You Don't Have Time to Read?

By Col Samuel G. Taxis

In the form of a statement the title of this article is probably repeated at least once a day in every office in the Marine Corps, in every squadroom, in the halls of the mighty and in the tents of the meek and lowly. And the strange thing is that they who make this statement actually believe it. Even stranger than this, there seem to be far more people who believe this statement than who disbelieve it.

Every article printed in a military publication or journal from the after action reports of the Battle of Salamis (480 B.C. published as censored the following year by the Cyprus Military Gazette) to the recent articles in the Marine Corps Gazette on events of the past war, has been subjected to criticism on the part of the readers on one or more counts. Some of the criticisms are relative to inaccuracies of fact, some deal with the dryness of the prose, and some with the sad old story of "It's too long—goes into too much detail—I haven't time to read that stuff—I couldn't remember it anyway."

Well, the editors of the MARINE CORPS GAZETTE will probably be among the first to admit that errors in fact sometimes slip in, and that their writers are not, except in rare cases, accomplished masters of English prose. However, at this point it may be of interest to discuss one particular item that enters into some of the criticism leveled at our military journals. Simply this—a large portion of the readers (or of those who should be readers) cannot read properly! Cannot read properly? Well, what do we mean by that radical statement? Here is the

answer to that question. A reader, a good reader, goes along painlessly at a reading rate of about five hundred words a minute, and understands what he reads with little effort. Until you can do that, or produce a reasonable facsimile of same, you cannot read in the fullest sense of the word.

Why is this important? Look at it this way. If the premise is true that a poor reader will get little from his reading efforts, and in turn will be disinclined to read, how can he keep up with the profession of arms? Remember, the military profession has never stood still except in the minds of those who have ultimately tasted failure. Today, with the art of war continually advancing at a rate perhaps never before equalled in history, the difficulty of remaining abreast of our profession is steadily increasing, particularly when one considers that in peacetime there is little actual opportunity to practice the profession of arms.

An interesting comment on the foregoing statement was made by the late RearAdm Mahan, when he wrote as follows to his old friend Samuel Ashe, "in America the profession must always suffer from national indifference, next, that unlike most professions it does not keep in constant practice, and hence when the more responsible positions are reached late in life, not only have nerve and health begun to fail (in the majority) but there comes a lack of familiarity with the details and exigencies which only daily practice does assure. This is felt not only with us but with all navies."

Schools cannot give an officer the complete education that should be the desire of every one of us. Schools can teach principles, and can train officers in fundamentals in accordance with the specific missions assigned particular schools. However, once out of school, is an officer necessarily qualified professionally in his rank or in the next higher rank? Do eight or nine months of school at intervals of five or more years offer as much knowledge as a well-rounded reading program of about two hours a week for the intervening five years? How can it? No military school attempts to do more than to provide sound background information and a sound basis for future work and further study and thought. From there on it is up to the individual officer to carry the ball himself. (Sorry—WMCR fits this picture also.)

FOR ALL PRACTICAL PURPOSES, studying and reading may be considered synonymous. Here I speak, of course, of reading with a view to improving one's knowledge of

"... Military schools attempt to do little more than provide sound background information and a sound basis for future work and further study and thought From there on it is up to the individual officer to carry the ball himself..."

a particular subject, not of reading light fiction or similar material simply for amusement or relaxation. As a matter of fact, some professional reading takes on an aspect of pure study when it deals with such matters as new developments in equipment, or serious research in tactical or strategic fields. The reading done outside of school has, however, one pleasant feature—that of non-exposure to the many examinations which seem to be a necessary evil in almost every school.

Continuing professional interest and the ability to read easily and well go hand in hand. That is, one without the other is as hard to imagine as a blonde without a lemon rinse. If reading is a chore, who can be expected to read enough professional matter to make any lasting impression upon his storeroom of military knowledge? Correspondingly, if professional interest is lacking, who will bother to read enough tho keep abreast of what is going on? Now for the sake of our united ego, let us assume that all marine officers are as interested in keeping up with the developments of modern warfare as we like to think they are. If this most desirable state exists (?), what can we do to make the reading necessary in order to gain and maintain a broad and up-to-date military background pleasant, easy and truly gainful?

First of all, subscription or other access to current military periodicals is necessary. This is easy. Every post, station and combat or service organization has these periodicals in the library, or if they do not, the problem of procurement is one of simply asking the library to obtain the needed items, or of subscribing oneself. Second, a reading schedule is required. By this no fixed schedule, such as eight to ten on Tuesday and Friday nights, is intended. However, a set plan allowing about two hours a week for professional research or reading is needed. To a great extent the particular field of interest of the officer concerned will help select the reading matter. In a broad sense, the perusal of several military periodicals each month will result in a wide coverage of many subjects dealing with all the services, and will lead officers into specific studies along lines of particular interest. Third, the ability to read well is a must; otherwise little will be read, time will be wasted, interest will lag, and ultimately our high resolves to continue mental expansion along the lines of our profession will deflate like a punctured balloon.

HAVING ASSUMED an inherent interest of all officers in their profession, and having discussed briefly the necessity of continued reading in order to supplement the instruction given in our schools and in order to stay abreast of professional matters, the remaining paragraphs of this article will deal specifically with the mechanics of the reading problem. Some of the facts set forth in the succeeding paragraphs may seem rather surprising—

however, they are factual and are based upon research into the subject of reading conducted by leading educators and educational institutions.

Although the average person may not be aware of it, poor reading is a common failing. Reading clinics established in some of our major colleges and universities have conclusively demonstrated that many adults, and here we refer to the class of adults who, from background and occupation, might be expected to be good readers, actually read at the rate of less than 210 words a minute. This is only the level to be expected of seventh grade pupils. Clinics conducted at one leading college to improve the reading of their freshmen classes have shown that year after year the reading speed of students is initially in the vicinity of 230 words a minute.

What do the above facts and figures indicate? Simply this—that poor reading habits extend to a great number of people, and are by no means limited to those without good educational backgrounds. Further, these figures mean that many of us read slowly, and without a proper degree of intelligent comprehension. Poor reading does not lend itself to enjoyment.

WHAT RESULTS can be achieved through a conscientious effort to improve our reading habits? Is the improvement of reading habits easy, or does it entail long and arduous practice? Reports from college reading clinics indicate that increased efficiency, coupled with almost doubled speed and far greater comprehension, can be achieved by the average conscientious student in a few weeks. This is not an easy task. It entails work and application. However, if a realistic approach to the problem is maintained and if the subject continues to apply the principles learned to his daily work, practically all of us may expect to be reading at a rate of 400 words a minute or better in a comparatively short time. Continued practice will lead to reading speeds of as high as 600 words a minute, and in the case of some readers even more startling results may be attained.

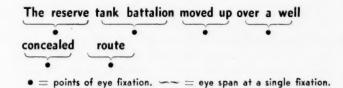
The most common faults in reading are the result of poor eye movement (too many eye movements per line of reading, and too slow eye movements), limited vocabulary, inability to think while reading (failure of the mind to grasp rapidly that which has been read), regression (the habit of reading back over what you have read which happens when the reader fails to absorb the subject matter at first try), and pronouncing or vocalizing words as they are read.

At this point let us take up reading faults one by one, learn what underlying cause exists in the case of each, and finally, determine the corrective measures necessary. First, poor eye movement. In order to read across a line of print, the eye must move. Dependent upon the ability of the reader, the number of eye movements per line will vary—the poor reader requiring many more moves to a

line than will the good reader. As a matter of physical fact, we actually read only when our eyes are at rest, or fixed upon a point on the page. When our eyes are moving, we are blind. Thus, if the progress of our eves across a page entails a shift of the eyes for every word read, and there are ten words in the line, we will have nine blind periods as we read across the page. Our eyes will be at rest ten times, and each time they are at rest, the word our eyes are fixed on is absorbed. Suppose that, as will be true in the case of a good reader, we can cross the same line in three movements. Then we will have three blind periods, and during each of the periods of fixation or rest we will be absorbing about three words. Obviously, the good reader is going to make better time simply because he has but three blind periods. Now let us examine the statements made above by means of a concrete example. Here is a simple sentence.

The reserve tank battalion moved up over a well-concealed route.

LET US EXAMINE, for a moment, four ways of reading this sentence. First we will look at the manner in which an average reader might be expected to read the line. He will normally start off by fixing his eyes near the beginning of the line, and then shift his eyes successively to the right. His reading pattern will look something like this:



Note that there are six points of eye fixation, and five periods of movement, or blind periods.

Second, let us examine the manner in which a good reader might be expected to read this line.

The reserve tank battalion	moved up over a
well-concealed route	•
wen-conceased route	

Note here that there were but three points of fixation, and but two moves. The eye span has been far greater and the wasted time has been less.

Third, observe the way in which a poor reader could be expected to read this sentence.

Our poor reader has picked out his sentence word by word, and has actually handicapped himself with the necessity of changing the point of fixation with every word, resulting in 10 blind periods.

Finally, we should consider the very poor reader, for to a certain extent the habits of this reader will offer us an insight into the relationship between the speed with which we can read and the rate of absorption by the mind of the material read. Here is the way our very poor reader might read the sentence.

When we first mentioned the most common faults in reading, we included inability to think while reading, and poor vocabulary. Examine the reading of the person in the last category discussed above. Note that not only has this reader required a greater number of eye movements and eye fixations, but consider also the messages which must be transmitted from eye to mind at each point of fixation. Here is the sentence broken down into the individual sections resulting from the many points of fixation:

The r eser ve ta nk bat talio n move d up o ver a well conc eale d rou te.

This is nothing but a worthless group of meaningless syllables:

Ther eser veta nkbat talio nmove dupo vera well conc eale drou te.

Here, in this last case, we see the reader who not only labors under the handicap of extremely poor reading habits, but who adds a further handicap to his troubles by throwing at his mind a series of meaningless groups of letters and then asking his mind to interpret them. Obviously, had the reader even a fair vocabulary, he would not have broken words apart in this manner. However, all considerations of vocabulary aside, it is easy to see how very poor readers, or mediocre readers to a lesser extent, add to their reading trouble by feeding to their minds material which is difficult to absorb, or at best, slower of absorption than material which comes from the text in comprehensive groupings of words. The eves of the good reader span groups of related words at each fixation. These are flashed to the mind instantly, and are understood without loss of time. The poor reader, who spans but a word at a time, sends many separate words to his mind and the mind must collect and relate these words, with a resulting loss of time.

If the foregoing clearly explains the need for good habits of eye movement, and indicates the amount of reading time wasted by reading but a word or two at each fixation, as well as the value of reading in such a manner as to absorb with each fixation related matter which is immediately comprehended by the mind, we can go on to a short discussion of vocabulary.

A GOOD VOCABULARY is essential to good reading. The better the vocabulary the less will be the difficulty which the mind faces when trying to absorb the material read. As difficult and strange words become familiar friends, whole sentences lose their strangeness, and are readily read and understood. A good vocabulary must be cultivated. However, be careful here, for you can easily get into a habit which may to some extent negate the improved reading you are striving for. Do not be too ready to look up every new word you find. If you do this, you will slow down your reading, and this in turn is just what we do not want to do. Speed in reading engenders good reading. To attain speed it is necessary to strive consciously to read faster and faster. When strange words confront you, try to get their meanings from the rest of the clause or sentence. Only when this cannot be done should you go to your dictionary. As an additional caution, provide yourself with a dictionary of military and naval terms as well as with a conventional dictionary.

Regression is another fault that has been mentioned. You must train yourself to read and to get the accurate and full meaning of the material at hand without continually going back over sentence after sentence. Many people have this habit, all unconsciously. Do not misinterpret the foregoing statement to mean that one should never re-read; just remember that an efficient reader will rapidly glean the salient facts from his book without wasting time in a continual re-check of words and phrases just read. If you do this, you are not reading properly. Of course when you are studying, and when you wish to retain a great amount of detail from what you read, it will be necessary that you go over the subject matter concerned more than once. Even when you do this, read all the way through the material first and grasp its broad meaning and salient features. Then, and only then, should you go back to pick up all of the details which you feel you must retain.

THE LAST BAD HABIT mentioned was pronouncing, or vocalizing (reading silently with accompanying lip movement). These mean the same thing. You have seen many people who accompany their reading with a continual movement of the lips. A word picked up by your eyes flashes through the mind like lightening. If you must take the time to pronounce it, you are simply putting an oral roadblock on the highway of your mind. Think the word "ambiguous," and note that the thought registers instantly in your mind. Now pronounce the same word aloud. Do you see how much time you can lose if you insist upon pronouncing every word you read?

At this point we have examined the various causes of poor reading, and should have enough knowledge of the subject to make a concrete attempt to improve our reading through actual practice aimed at teaching good eye movements described above. How can this practice be accomplished? To answer this question, the next few paragraphs will be devoted to a description of some exercises, which, while helpful, should be augmented by other exercises of similar purpose devised by the individual.

First of all, try to read with only three or four fixations per line of print on lines the length of those found in the average book. Accustom the eyes to such movement by practicing on narrow vertical columns of words, either columns which you make up and type yourself, or columns formed by blanking out the right half or two-thirds of a page from a book with a piece of paper, or by using the narrow vertical columns found in many magazines and newspapers. When you make your own columns, be sure that you use words which fit together intelligibly. Here we have a sample column:

the rains came the tiny tree after he ran the tanks moved the plane dove

Draw an imaginary line down the center of the column from top to bottom. Now, without lowering the eyes (for you don't usually lower your eyes when reading a book until you shift your eyes at the end of a line), but lowering your head as you read down, read each line. Try to grasp each word grouping with a single eye fixation—and make a determined effort to do this. Repeat the effort several times, until you find that you can actually read each line with only one eye fixation. This exercise will gradually increase your eye span.

Next, attempt to read lines of slightly greater width in the same manner as you read each line in the first column. Here we need a new column, such as this:

> danger was evident now said the elderly doctor came after the last the blast lifted him a rather remarkable man a roller coaster effect

Practice this column until a good degree of proficiency is attained.

Vary this exercise with reading from a book, and attempt to retain when reading from the book the skill which you have been striving for during the other exercises.

You undoubtedly would like to know some way to check

your progress, or perhaps to learn just how you read, with regard to eye movements, at this very moment. This is easy—hold a book up in front of you, read from it, and ask a friend to sit in front of you and watch your eye movements. Or let a friend hold a mirror over your shoulder and in front of your eyes (clear of your line of sight), and thus watch your eye movements. Your friend will easily be able to count the eye movements you make per line of reading, and you will be able to thus check factually upon your habits, and to note improvements as you progress.

THE SUBJECT OF BETTER READING has been covered only to a limited extent in the foregoing paragraphs; obviously, a subject of such scope cannot be adequately treated in so short a time. If you are interested in becoming as good a reader as is within your capabilities, practice until you become one. There have been many excellent texts written upon this subject, and for the officer who is deeply interested and will give the time required, the book *How to Read Better and Faster* by Norman Lewis, published by the Thomas Y. Crowell Company, of New York, is highly recommended.

To summarize the subject of better reading, here are a few reminders, all brief and to the point:

Practice reading well.

Good readers are fast readers.

Slow readers are poor readers.

When reading, keep your mind fixed upon the subject. Reading will improve with practice, so practice, and strive for speed.

A good reader has a wide background of knowledge, and a wide background of knowledge helps to make a good reader.

A wide eye span takes in more words at a single fixation than does a narrow eye span, thus leading to faster reading and to easier absorption by the mind through the release from eye to mind of intelligible phrases rather than single words, disconnected in meaning.

In summary, remember that the sound and extensive military background essential in the mental make-up of a competent marine officer cannot be provided in its entirely through our service schools. Continued study, reading and progressive thinking are inseparably linked together, and when combined in proper proportion go far towards increasing the efficiency of the individual officer and of the service at large. Military reading should be on a broad basis, and not limited solely to the subjects which are within the normal field of specialization of the Marine Corps, but should include a wide and sound knowledge of the tactics and techniques practiced by other services. Without the ability to read well, the background of knowledge desired is doubtful of attainment. Without this ability professional interest will lag, mental stagnation will threaten, and the individual officer will lose in worth to himself and to the corps.

Required Reading

ALL OFFICERS in preparing for their professional examinations will be expected to be familiar with the following publications: the Constitution of the United States, U. S. Naval Regulations, Marine Corps Manual, Naval Courts and Boards, Navy Department General Orders, Marine Corps Orders, Marine Corps Letters of Instruction, Marine Corps Current Wartime T/Os, USF 6, USF 63, MCS Staff Handbook, Phibs 3, 9, 11, 23, Field Manuals 19-15, 27-10, and Rules and Procedure for Administration of Brig (colonels excepted).

In addition, officers preparing for promotion to the rank of captain and below will be held responsible for the Landing Force Manual (Chapters 10 and 11), Marine Corps Training Bulletins 101 and 102, USF 73 or 74B (aviation officers only) Field Manuals 5-15, 5-25, 7-10 (1stLts only), 7-20 (ground officers only, 1stLts excepted), 17-36, 21-5, 21-10, 21-11, 21-25, 21-26, 21-40, 21-75, 22-5, 23-5, 23-7, 23-15, 23-30, 23-35, 23-55, MCS 3-101 (captains only) Phibs 10 (1stLts only), 12, 13, 14 (captains only), 21 (1stLts only), and BD-8 (CWOs and cap-

tains only).

Officers eligible for the rank of major and above, in addition to the basic references given in the first paragraph, must acquaint themselves with Nav Exes P-435 (majors excepted), Field Manuals 7-20 (ground officers only, colonels excepted), 7-40, 27-5, 100-5, 100-10, 100-15 (colonels only), MCS 3-4 (majors excepted), Phibs 5, 8, 14, 18, 19, 20, 24, 26, and BDs 1, 2, 7, and 8.

More detailed references and their sources are being sent to all officers by Headquarters, Marine Corps, as Change No. 1 to Letter of Instruction 1605. All permanent commissioned officers and warrant officers on the active list of the regular Marine Corps will be professionally examined prior to promotion. Officers serving in a temporary status in any grade will not be examined for permanent appointment in the same grade. Temporary commissioned officers will not be examined before promotion to the next higher temporary commissioned rank. None of these provisions apply to reserve officers, either on active or inactive status.

Passing in Review

BOOKS OF INTEREST TO MARINE READERS

History of the Army . . .

THE BEGINNING OF THE U. S. ARMY, 1783-1812 — Maj James Ripley Jacobs, USA (ret), 419 pages, illustrated. Princeton: Princeton University Press. \$5.00

Marines who are so wisely proud and thoughtful of our own great traditions sometimes forget that the U. S. Army also has traditions. What is more, we often fail to realize how much of our own military background stems insensibly from the *common* heritage of American arms: the old Marine Corps is there, yes, but so is the Old Army, that unsung, often ponderous and clumsy, but hard-fighting Old Army from which we took, for example, the field hat, the poncho, the tradition of the American military rifleman, and even our close-order drill.

Of course the reason why the story of American arms is full of intermittent blank spaces is that there have been few (if any) readable, comprehensive and accurate histories of the U. S. armed forces. If anything, in this respect, the Marine Corps is worse off even than the Army: without particularizing unkindly, it is enough to say that neither service enjoys a really first-rate overall history. I am happy to announce, therefore, that Maj Jacobs' first volume (of what he projects as a series now aimed at 1846) goes far to fill a long standing need.

The Beginning of the U.S. Army requires 419 pages to tell with understanding, military judgment, and even a dash of humor, the story of a discouraged, ill-supported, under-equipped infant regular army struggling for its existence not only against Indians, British, French and Spaniards, but all too frequently against the militia mind-set of a republic which had just fought a successful revolution to secure the privilege of throwing rocks at the King's regulars. The book, as the author himself points out, inevitably becomes, in part, a social study of its uncertain times, as well as of the uncertainty of the role of the U. S. Army. Against a backdrop which shows the gradual shaping of the military policy of the United States, the narrative sets out the stories of two major campaigns - the winning of the Northwest Territory, and the inexorable expansion of the frontier into the Southwest and the Louisiana Territory. Both themes are built up in magnificent, almost day-to-day, but rarely

pedestrian detail, detail so well assembled that it never loses itself in aimlessness. While we are learning what an infantry private of 1800 had for his rations, or the equipment of the average frontier sick-bay, we also see full-length the figures of Anthony Wayne, Thomas Jefferson, the unhappy St. Clair, and the tarnished, flamboyant Most important of all, we are seeing the Army as a social institution, shaped by and shaping the America of its time. To appreciate the carry-over of these matters, broad and narrow, even technically, to the modern American doctrines of arms, it is enough, for example, to read of "Mad Anthony" Wayne's security on the march while moving an army through implacably hostile country - or, in reverse, to see how St. Clair lost an earlier army to a beautifully planned and executed ambush. Change the uniforms and something of the vegetation, and the whole thing might be Haiti, Nicaragua or Bougainville. Any small wars text could cite with approbation our method of pacifying the Northwest Territory between 1793 and 1796. These are things that atom bombs, even, change very little.

If you have read the foregoing paragraphs, you will understand that I liked The Beginning of the U.S. Army. Any work, however, can benefit by criticism, even when it verges on fly-specking. Understood in that sense, I might suggest the lack of good maps, a "must" item for military histories. Moved (probably) by a feeling for the picturesque and the flavor of old times, Maj Jacobs has relied largely upon contemporary maps of the main actions, rather than modern reconstructions (except in the case of St. Clair's 1791 defeat). Like the cartography, the illustrations are also unduly sparse, a defect admittedly more criticizable by a reviewer who get a free copy than by a purchaser to whom an extra seventy-five cents in the cost of a book may mean the difference between hash and lamb-chops on the table. Nevertheless, I would have enjoyed seeing ample illustrations of the uniforms and equipment of the period, which were just hinted at in the lively pen-sketched chapter headings. Those who prefer the tidiness of the undocumented pages of Mr Fletcher Pratt or of our own Col Metcalf will probably boggle at Maj Jacobs' continual use of footnoting, but I'm "from Missouri," and regard stated sources as RDH, Jr. reassuring.

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Ambassadors of Good Will

THE SOUTHERNMOST POST of the American Legion is a witness to the fact that in addition to being detailists in the matter of causing discomfort to their enemies, the Marines rank fairly high as ambassadors of good will.

When the Second Division left Wellington, New Zealand, after having spent nearly a year there, a good sized percentage of the men swore by the bones of O'Bannon that some day they were going to come back and settle down. The country, the climate, and the people had worked together to cast something of a spell and the Marines fell victims to it without a struggle.

Then came Tarawa, and it became apparent that the good feeling was not all on one side. The New Zealand Government requested that the casualty lists be given them so that the Marines' friends could keep track of them. The request was granted and the long lists were published in the local press. The following year, items appeared in the In Memoriam columns that said that the Americans had not been forgotten.

And what of the men who were going back? The war was a long one and it was fought far to the north, and what with one thing and another, very few of the Second Division were able to fulfil their

promises to themselves. Many of them compromised by bringing their wives over to the United States, while others, still clinging to the old dream, kept in touch with "down under" by mail.

One small group, however, was made of hardier stuff or was more fortunate. About fifty men have succeeded in getting back to Wellington to settle. They are a part of the local scene now, engaged in the usual businesses of the city—the majority of them seem to be connected with the automobile industry, although one is studying dentistry at the University under the G. I. Bill of Rights.

The group remains thoroughly and typically American, however — any doubt would be dispelled in regard to that by the continued and active existence of the Franklin D. Roosevelt Post of the American Legion, at Wellington, New Zealand.

There is room for speculation in that startlingly paradoxical situation — a division of the roughest, toughest fighting men of the country acting as ambassadors of friendship and good will. If it worked so well in the case of New Zealand, there seems to be no reason why it shouldn't work as well elsewhere. Now if we could only make it possible to establish, let us say, the George Marshall Post in Ekaterinoslav or Piatogorsk — JLZ

